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CONTATO: MARCOS@ESQUEMASELETRICOS.COM.BR

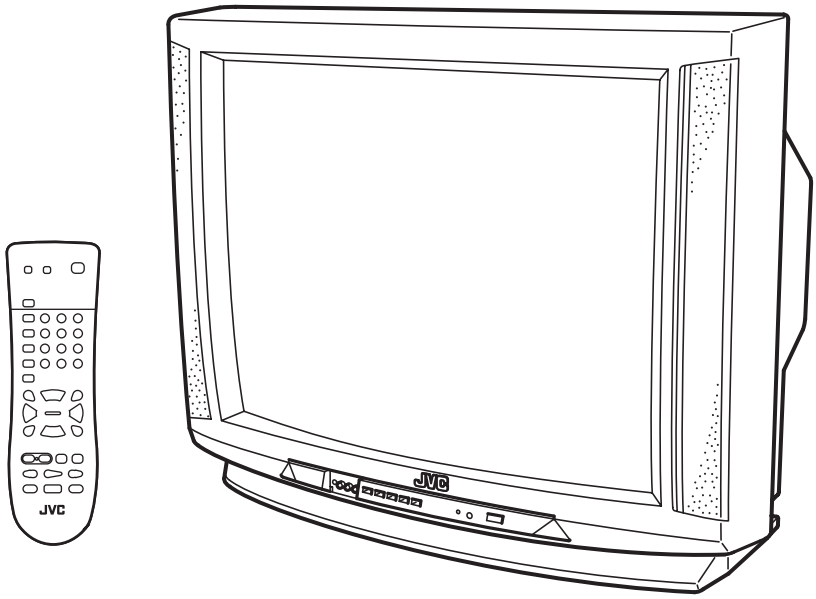
JVC

SERVICE MANUAL

COLOR TELEVISION

AV-20D304/SA

BASIC CHASSIS
FE2



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No.52103
2003/02

SPECIFICATION

Items	Contents
Dimensions (W x H x D)	59.2cm x 45.6cm x 48.7cm (23-3/8” x 18” x 19-1/4”)
Mass	20.4kg (45 lbs)
TV RF System	CCIR(M)
Color Sound System	NTSC, BTSC system (Multi Channel Sound)
TV Receiving Channels and Frequency VL Band VH Band UHF Band	 02ch~06ch : 54MHz~88MHz 07ch~13ch : 174MHz~216MHz 14ch~69ch : 470MHz~806MHz
CATV Receiving Channels and Frequency Low Band High Band Mid Band Super Band Hyper Band Ultra Band Sub Mid Band	54MHz~804MHz 02~06, A-8 by 02~06&01 07~13 by 07~13 A~1 by 14~22 J~W by 23~36 W+1~W+28 by 37~64 W+29~W+84 by 65~125 A8, A4~A1 by 01, 96~99
TV/CATV Total Channel	180 channels
Intermediate Frequency Video IF Carrier Sound IF Carrier	 45.75MHz 41.25MHz (4.5MHz)
Color Sub Carrier	3.58MHz
Power Input	120V AC, 60Hz
Power Consumption	75W
Picture Tube	20” (51cm) measured diagonally H : 40.6cm x V : 30.5cm
High Voltage	26.3kV±0.5kV (at zero beam current)
Speaker	5 x 9cm (2” x 3-1/2”) Oval type x 2
Audio Power Output	1.2W x 2
Antenna terminal (VHF/UHF)	F-type connector, 75ohm
Video / Audio Input (1 / 2 / 3) Video (1 / 3) Audio (1 / 2 / 3) S-Video (Input 1) Component (Input 2)	 1V(p-p), 75ohm (RCA pin jack x 2) 500mV(rms) (-4dBs), high Impedance (RCA pin jack x 8) Mini DIN 4pin x 1 Y : 1V(p-p) positive (negative sync provided, when terminated with 75ohm) C : 0.286V(p-p) (burst signal when terminated with 75ohm) RCA pin jack x 3 Y : 1V(p-p) positive (negative sync provided, when terminated with 75ohm) Pb/Pr : 0.7V(p-p) 75ohm
Audio Output (Variable)	More then 0~1550mV(rms) (+6dBs) low impedance (400Hz when modulated 100%) (RCA pin jack x)
Headphone Jack	3.5mm mini jack x 1
Remote Control Unit	RM-C1254G (AA battery x 2)

Design & specifications are subject to change without notice.

SECTION 1
PRECAUTIONS

1.1 SAFETY PRECAUTIONS

(1) The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

(4) **Use isolation transformer when hot chassis.**
The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.

(5) **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.

(6) The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

(7) If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

(8) Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

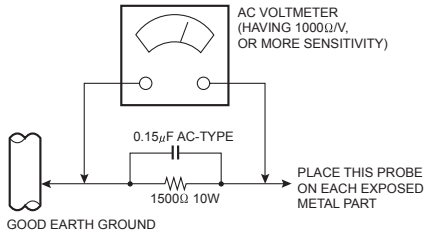
(9) When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

(10) **Isolation Check**
(Safety for Electrical Shock Hazard) After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

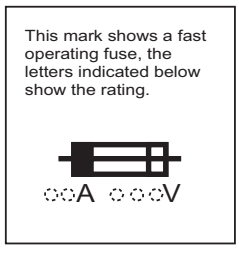
a) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires test equipment not generally found in the service trade.

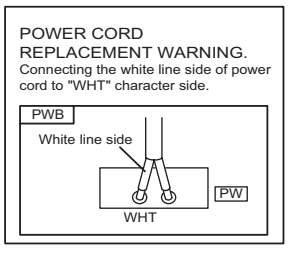
b) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.). However, in tropical area, this must not exceed 0.2mA AC (r.m.s).

- **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500ohm 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



(11) **High voltage hold down circuit check.**
After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
See item **"How to check the high voltage hold down circuit"**.

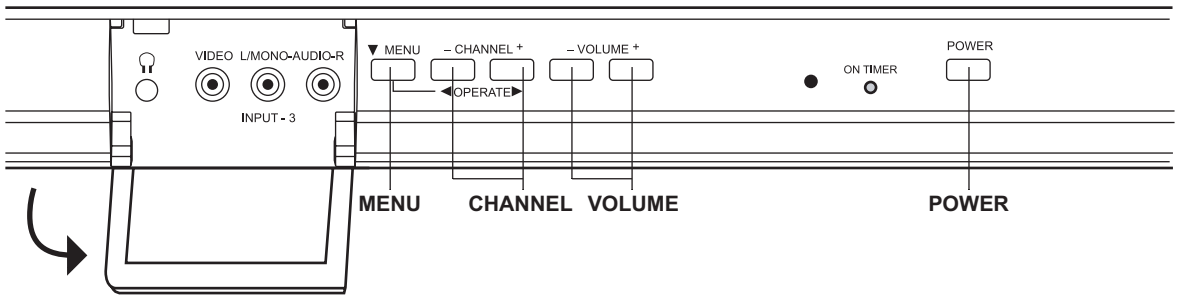




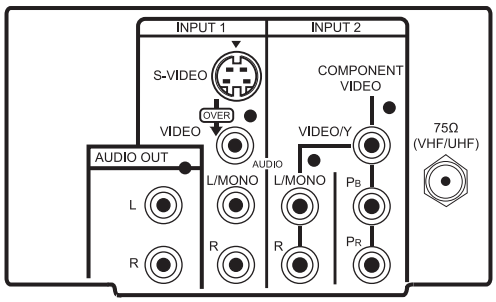
SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 FUNCTIONS

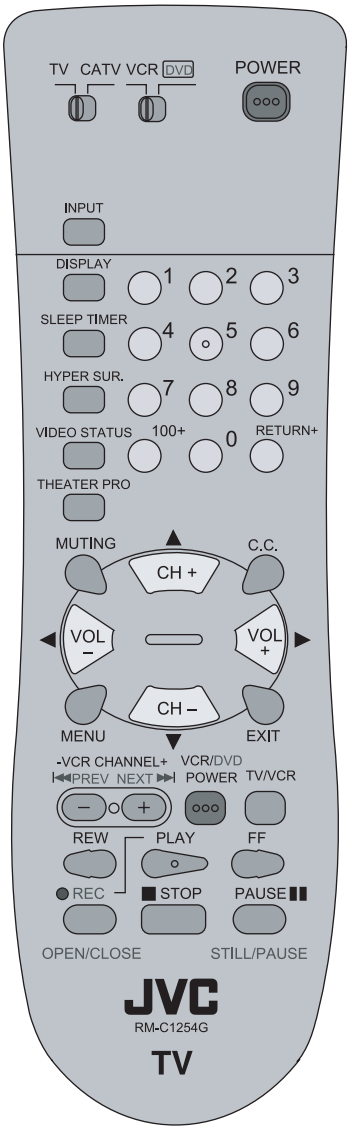
[FRONT PANEL]



[REAR PANEL]



[REMOTE CONTROL UNIT] (RM-C1254G)



2.2 DISASSEMBLY PROCEDURE

2.2.1 REMOVING THE REAR COVER

(1) Unplug the power plug.
(2) As shown in the Fig.1, remove the 9 screws **[A]**.
(3) As shown in Fig.1, remove the 4 screws **[B]**.
(4) Then remove the REAR COVER toward you.

2.2.2 REMOVING THE MAIN PWB

- Remove the REAR COVER.
  (1) Raise the backside of the MAIN PWB, and remove the PWB STOPPER **[C]** from the cabinet.
  (2) Withdraw the MAIN PWB backward. (If necessary, remove the wire clamp, connectors etc.)

2.2.3 REMOVING THE SPEAKER

- Remove the REAR COVER.
  (1) As shown in Fig.1, remove the 4 screws **[D]**, then remove the speaker.
  (2) Follow the same steps when remove the other hand speaker.

NOTE:

When removing the 4 screws **[D]** of the speaker, remove the lower side screw first, and then remove the upper one.

2.2.4 CHECKING THE PW BOARD

- Remove the REAR COVER.
  (1) Pull out the MAIN CHASSIS (refer to REMOVING THE MAIN PWB).
  (2) Erect the MAIN CHASSIS vertically so that you can easily check the backside of the PW Board.

CAUTION:

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is onnected to the CRT SOCKET PW board.

2.2.5 WIRE CLAMPING AND CABLE TYING

(1) Be sure to clamp the wire.
(2) Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

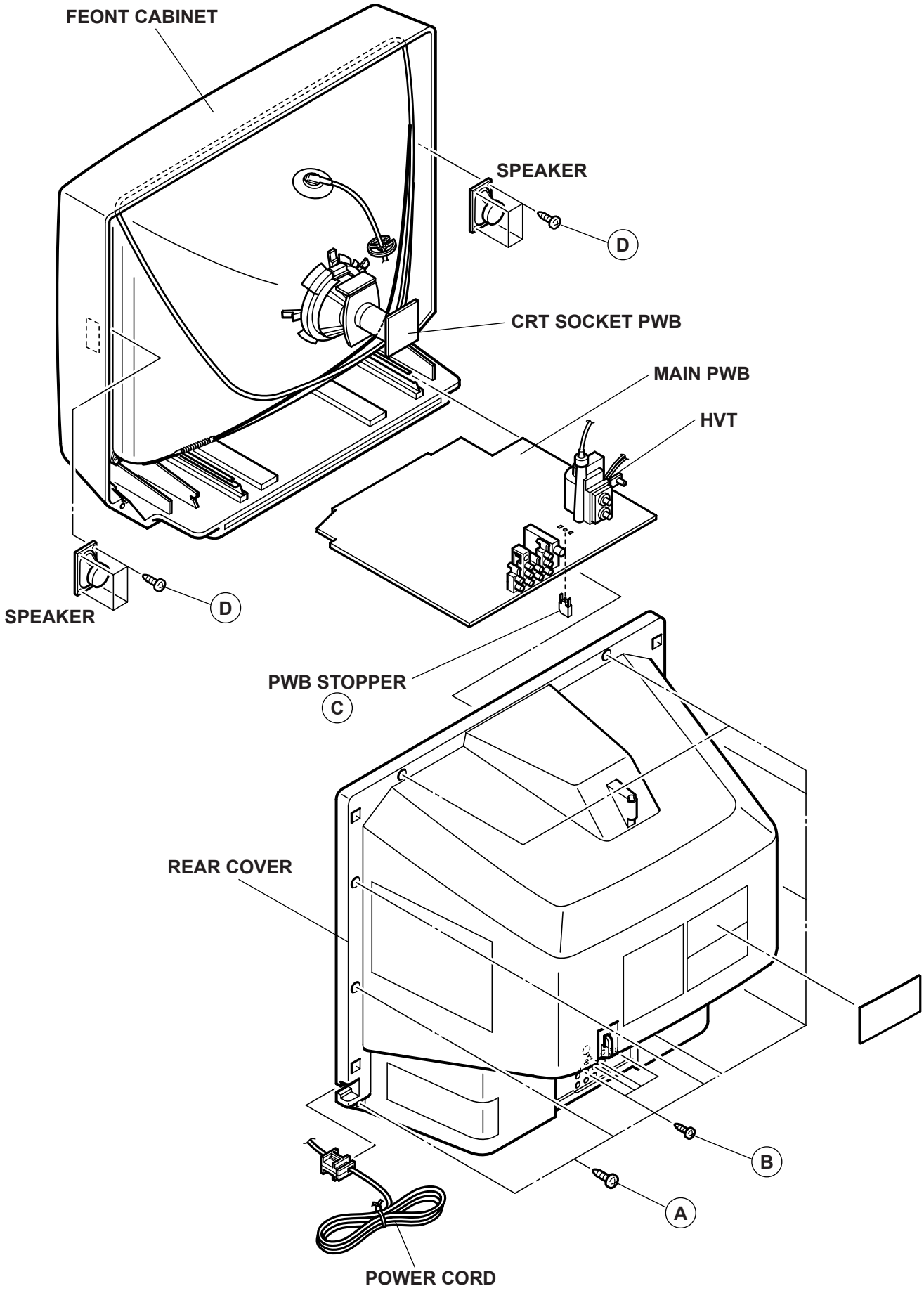

FEONT CABINET
SPEAKER
D
CRT SOCKET PWB
MAIN PWB
HVT
SPEAKER
D
PWB STOPPER
C
REAR COVER
B
A
POWER CORD

Fig.1

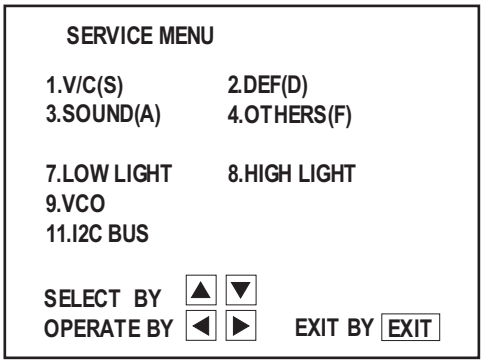
2.3 MEMORY IC REPLACEMENT

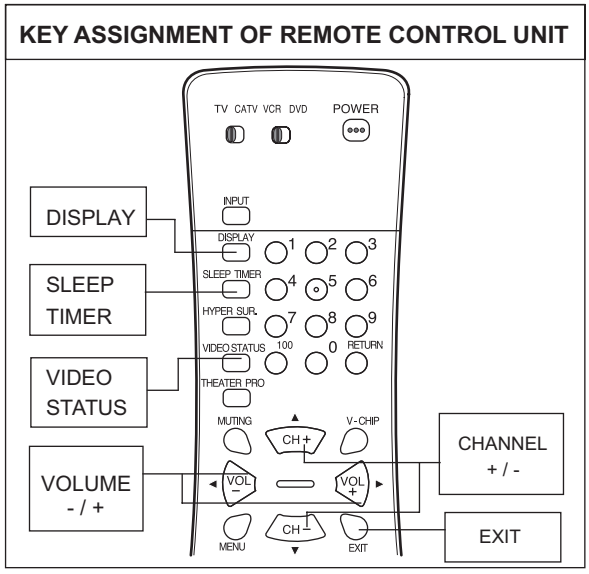
2.3.1 MEMORY IC

This TV use memory IC.
In the memory IC, there are memorized data for correctly operating the video and deflection circuits.
When replacing the memory IC, be sure to use IC written with the initial values of data.

2.3.2 PROCEDURE FOR REPLACING MEMORY IC

(1) **Power off**
Switch the power off and unplug the power cord from the outlet.
(2) **Replace IC**
Be sure to use a memory IC written with the initial setting data.
(3) **Power on**
Connect the power cord to the outlet and switch the power on.
(4) **Setting of receive channels**
Set the receive channels. For setting, refer to the OPERATING INSTRUCTIONS.
(5) **User settings**
Check the user setting items according to “USER SETTING VALUES”, and if these are different, set the correct value.
(6) **SERVICE MENU setting**
Verify what to set in the SERVICE MENU, and set whatever is necessary. Refer to the ADJUSTMENT for setting.





2.3.3 USER SETTING VALUES

Setting item	Setting value	Setting item	Setting value
REMOTE CONTROL UNIT KEY			
POWER	OFF	DISPLAY	OFF
CHANNEL	CH-02	VIDEO STATUS	DYNAMIC
VOLUME	15	HYPER SURROUND	OFF
TV/VIDEO	TV		
SETTING OF MENU			
PICTURE MODE		**INITIAL SETUP MODE**	
TINT	Center	LANGUAGE	ENG
COLOR	Center	FRONT PANELLOCK	OFF
PICTURE	+8	V2 COMPONENT-IN	NO
BRIGHT	Center	AUTO SHUT OFF	OFF
DETAIL	+10	CLOSED CAPTION	OFF
NOISE MUTING	ON	AUTO TUNER SET UP	AIR
SOUND MODE		CHANNEL SUMMARY	Unnecessary to set
BASS	Center	V-CHIP	OFF
TREBLE	Center	SET LOCK CODE	(0000) Unnecessary to set
BALANCE	Center	XDS ID	ON
MTS	STEREO		
CLOCK / TIMERS MODE			
SET CLOCK	MANUAL		
TIME ZONE	PACIFIC		
D.S.T.	OFF		
ON / OFF TIMER	OFF		

2.4 REPLACEMENT OF CHIP COMPONENT

2.4.1 CAUTIONS

(1) Avoid heating for more than 3 seconds.
(2) Do not rub the electrodes and the resist parts of the pattern.
(3) When removing a chip part, melt the solder adequately.
(4) Do not reuse a chip part after removing it.

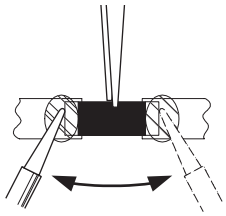
2.4.2 SOLDERING IRON

(1) Use a high insulation soldering iron with a thin pointed end of it.
(2) A 30w soldering iron is recommended for easily removing parts.

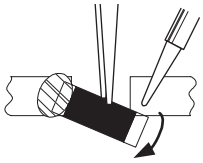
2.4.3 REPLACEMENT STEPS

1. How to remove Chip parts
[Resistors, capacitors, etc.]

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.



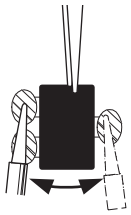
(2) Shift with the tweezers and remove the chip part.



[Transistors, diodes, variable resistors, etc.]

(1) Apply extra solder to each lead.

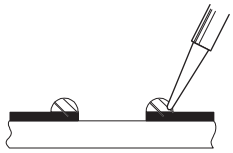
(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.



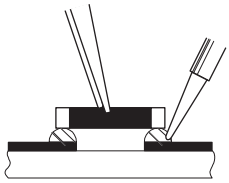
Note :
After removing the part, remove remaining solder from the pattern.

2. How to install Chip parts
[Resistors, capacitors, etc.]

(1) Apply solder to the pattern as indicated in the figure.

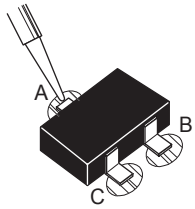


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

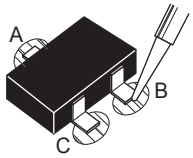


[Transistors, diodes, variable resistors, etc.]

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



SECTION 3
ADJUSTMENT

3.1 ADJUSTMENT PREPARATION

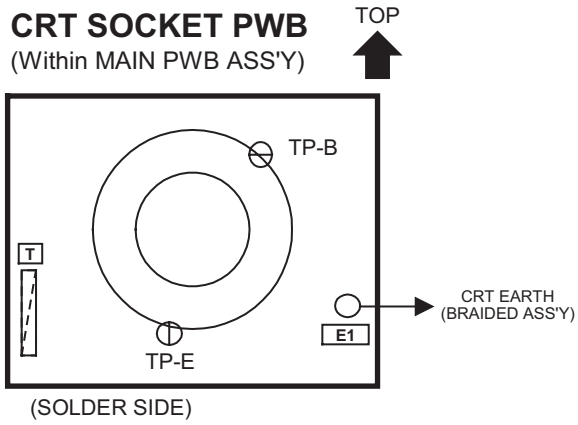
(1) There are 2 ways of adjusting this TV : One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.
(2) The adjustment using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
(3) Make sure that connection is correctly made AC to AC power source.
(4) Turn on the power of the TV and measuring instruments for warning up for at least 30 minutes before starting adjustments.
(5) If the receive or input signal is not specified, use the most appropriate signal for adjustment.
(6) Never touch the parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.
(7) Preparation for adjustment. Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT.

Item	Preset value
PICTURE MODE (VSM)	DYNAMIC
TINT, COLOR, PICTURE, BRIGHT, DETAIL	CENTER
MTS	STEREO
BASS TREBLE BALANCE	CENTER
HYPER SURROUND	OFF

3.2 MEASURING INSTRUMENT AND FIXTURES

(1) DC voltmeter (or digital voltmeter)
(2) Oscilloscope
(3) Signal generator (Pattern generator : NTSC)
(4) TV audio multiplex signal generator
(5) Remote control unit

3.3 ADJUSTMENT LOCATIONS



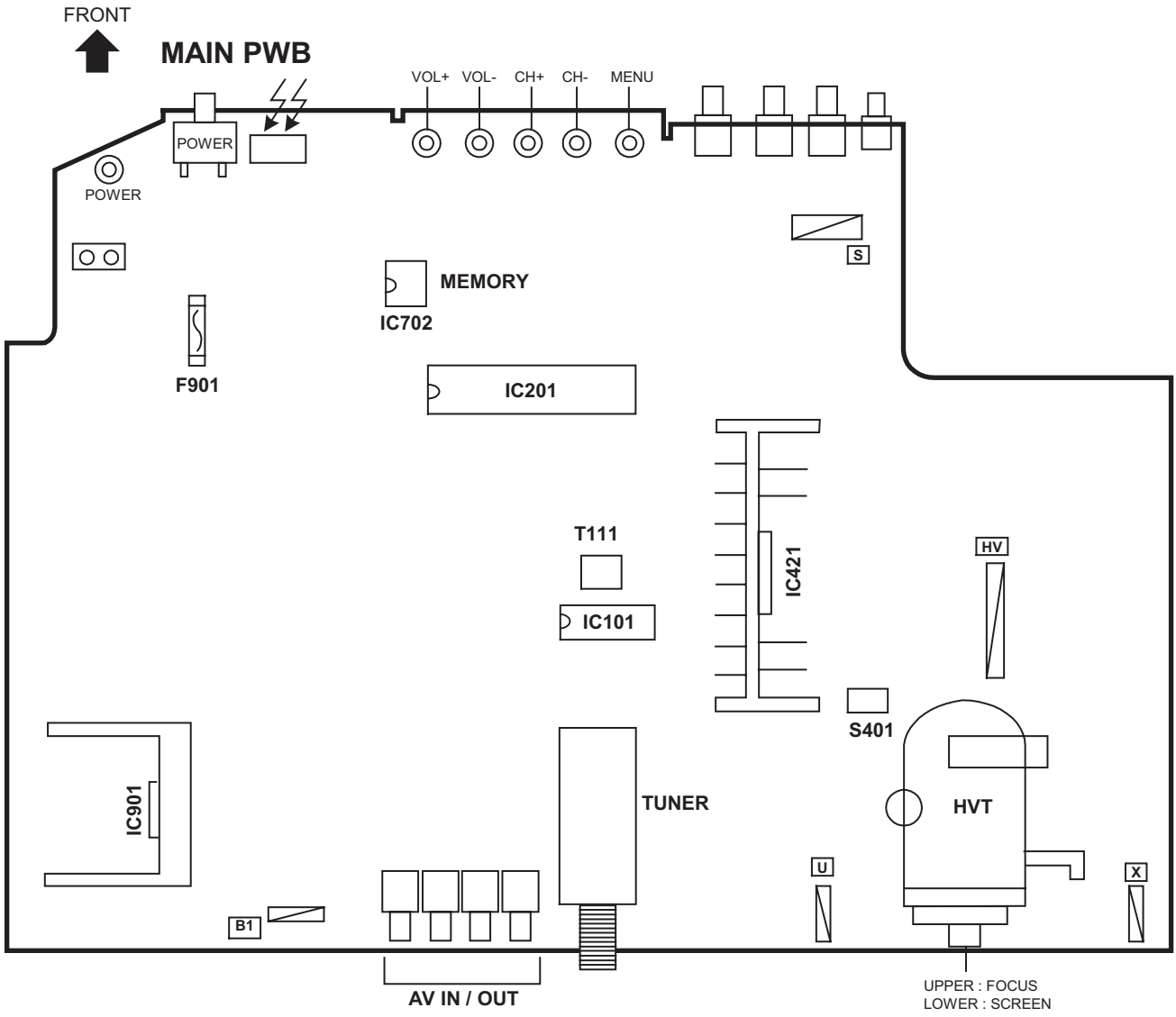


Fig.1

3.4 BASIC OPERATION OF SERVICE MENU

3.4.1 TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

3.4.2 SERVICE MENU ITEMS

With the SERVICE MENU, various adjustments can be made, and they are broadly classified in the following items of settings.

(1) V/C (S)	This mode adjusts the VIDEO and CHROMA control circuit.
(2) DEF (D)	This mode adjusts the DEFLECTION control circuit.
(3) SOUND (A)	This mode adjusts the SOUND control circuit.
(4) OTHERS (F)	This mode adjusts the display setting and the other settings (Do not change the values).
(7) LOW LIGHT	This mode adjusts the WHITE BALANCE (LOW LIGHT) control circuit.
(8) HIGH LIGHT	This mode adjusts the WHITE BALANCE (HIGH LIGHT) control circuit.
(9) VCO	This mode adjusts the VCO control circuit.
(11) I2C BUS	This mode adjusts the I^2C BUS control circuit (They are fixed).

3.4.3 BASIC OPERATION IN SERVICE MENU

3.4.3.1 HOW TO ENTER THE SERVICE MENU

(1) Press the [SLEEP TIMER] key and set the SLEEP TIMER for "0 MIN".
Then press the [DISPLAY] key and [VIDEO STATUS] key of the remote control unit at the same time to enter the SERVICE MENU screen.

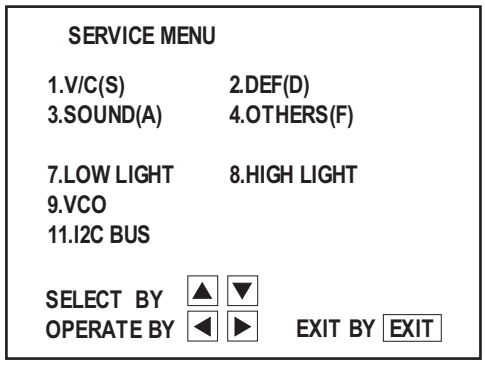


Fig.1

3.4.3.2 SUB MENU SCREEN SELECTION

Press [VOLUME (-/+)] keys of the remote control unit, and select the SUB MENU SCREEN from SERVICE MENU.
In SERVICE MENU, press the [CHANNEL (-/+)] key to select any of the SUB MENU items. The letters of the selected items are displayed in yellow.

1.V/C(S) 2.DEF(D)
3.SOUND(A) 4.OTHERS(F)
7.LOW LIGHT 8.HIGH LIGHT
9.VCO
11.I2C BUS

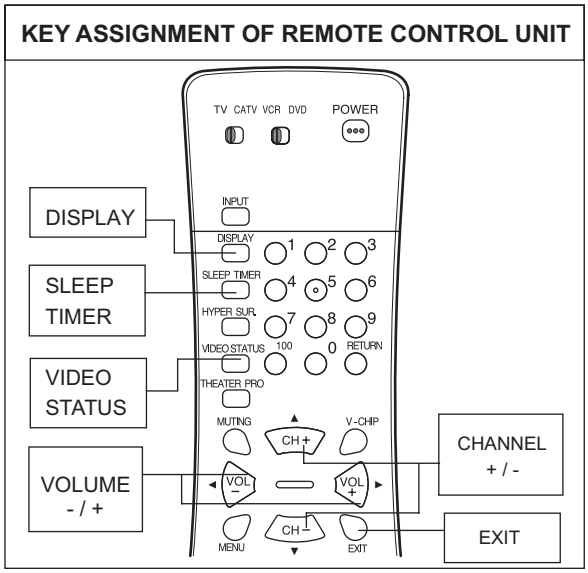


Fig.2

3.4.3.3 SETTING METHOD

[1.V/C(S) ADJUSTMENT MODE]

For example, adjust the 1.V/C(S) by using the remote control unit.

1) Press the [CHANNEL (-/+)] keys to select the one of adjustment mode from S01 BRIGHT to S21 AGC ADJ.
2) Press the [VOLUME (-/+)] keys to change the adjustment value. The setting value will be stored automatically when release the REMOTE CONTROL UNIT keys.
It can adjust the items from 1.V/C(S) to 3.SOUND(A) in the same procedure.

[7.LOW LIGHT, 8.HIGH LIGHT AND 9.VCO ADJUSTMENT MODE]

Since the key operation in this mode is peculiar, please refer to the clause of the "ADJUSTMENT PROCEDURE".

[4.OTHERS AND 11.I2C BUS ADJUSTMENT MODE]

These are no requirement for adjustment. Setting only. Don't change these values.

3.4.3.4 RELEASE OF SERVICE MENU

When adjustment is completed, press the [EXIT] key twice. Then return to the normal screen.

3.4.4 SERVICE MENU FLOW CHART

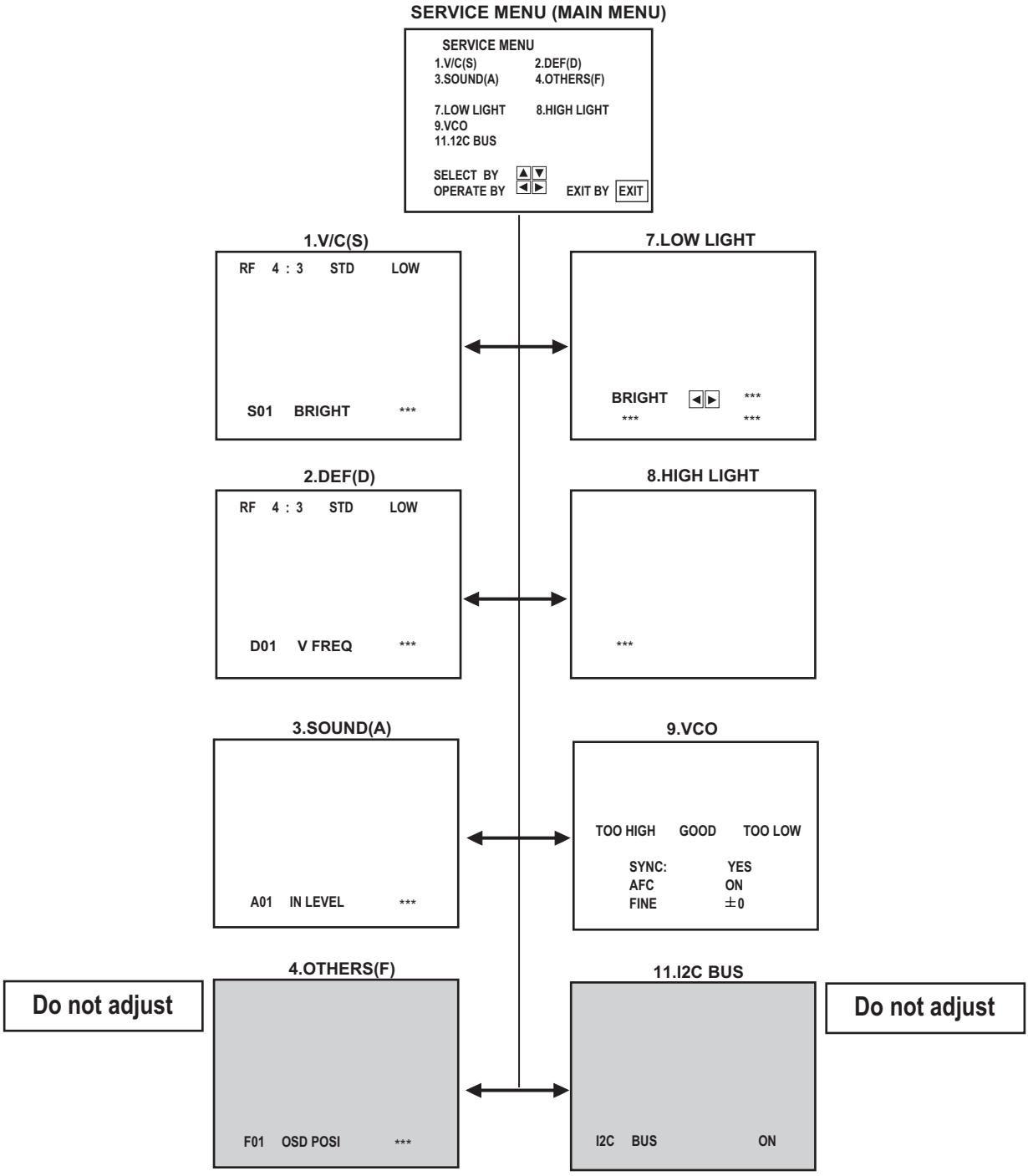


Fig.3

3.5 INITIAL SETTING VALUE OF SERVICE MENU

(1) Adjustment of the SERVICE MENU is made on the basis of the initial setting values. However, the new setting values which displays on the screen in its optimum condition may differ from the initial setting value.
(2) Do not change the initial setting values of the items not listed in "ADJUSTMENT PROCEDURE".
(3) "---" is impossible to adjust.

3.5.1 [1.V / C]

No.	Setting item	Variable range	Initial setting value					
			RF		EXTERNAL (SV / CV)		COMPONENT	
			STANDARD	THEATER	STANDARD	THEATER	STANDARD	THEATER
S01	BRIGHT	0~127	64	---	---	---	---	---
S02	PICTURE	0~127	65	---	---	---	---	---
S03	COLOR	0~127	41	---	---	---	47	---
S04	TINT	0~127	63	---	---	---	64	---
S05	DETAIL	0~63	30	---	35	---	40	---
S06	BRIGHT +-	-128~+127	---	0	1	---	1	---
S07	PICT+-	-128~+127	---	-15	0	---	0	---
S08	COLOR +-	-128~+127	---	-3	0	---	---	---
S09	TINT+-	-128~+127	---	-6	-4	---	---	---
S10	DETAIL+-	-128~+127	---	3	---	---	---	---

No.	Setting item	Variable range	Initial setting value							
			RF/EXT (SV / CV)				COMPONENT			
			STANDARD		THEATER		STANDARD		THEATER	
			LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
S11	R CUT OFF	0~255	30	---	---	---	---	---	---	---
S12	G CUT OFF	0~255	30	---	---	---	---	---	---	---
S13	B CUT OFF	0~255	30	---	---	---	---	---	---	---
S14	R DRIVE	0~127	64	---	---	---	---	---	---	---
S15	B DRIVE	0~127	64	---	---	---	---	---	---	---
S16	R CUT+-	-128~+127	---	0	0	0	0	---	---	---
S17	G CUT+-	-128~+127	---	0	0	0	0	---	---	---
S18	B CUT+-	-128~+127	---	0	0	0	0	---	---	---
S19	R DRV+-	-128~+127	---	5	13	7	0	---	---	---
S20	B DRV+-	-128~+127	---	6	-25	-9	0	---	---	---

No.	Setting item	Variable range	Initial setting value
S21	AGC ADJUST	0~127	64

3.5.2 [2.DEF]

No.	Setting item	Variable range	Initial setting value	
			RF	EXTERNAL (SV / CV)
D01	AFC GAIN	0~3	0	2
D02	H POSI	0~31	13	13
D03	V SIZE	0~125	65	65
D04	V S CORR	0~15	0	0
D05	V LIN	0~15	8	8
D06	H SIZE	0~63	32	32
D07	WVMT TOP	0~3	0	0
D08	WVMT BTM	0~3	0	0
D09	EWCR TOP	0~31	16	16
D10	EWCR BTM	0~31	16	16
D11	EW PARA	0~63	26	26
D12	BLANK SW	0~1	0	0

3.5.3 [3.SOUND MODE]

No.	Setting item	Variable range	Initial setting value
A01	IN LEVEL	0~63	36
A02	FH MON	0~1	0
A03	ST VCO	0~63	43
A04	PIL CAN	0~1	0
A05	FILTER	0~63	35
A06	LOW SEP	0~63	8
A07	HI SEP	0~63	26
A08	5FH MON	0~1	0
A09	SAP VCO	0~63	44

3.5.4 [4.OTHERS]

No.	Setting item	Variable range	Initial setting value
F01	OSD POSI	0~255	28
F02	OSD PREQ	0~255	85
F03	CCD POSI	0~63	47
F04	CCD FREQ	0~255	94
F05	CCD CONT	0~63	11
F06	PUR CONT	0~255	62
F07	VNR CHK	0~255	3
F08	VCSN TM	0~255	5
F09	CCD PCHK	0~1	1

3.5.5 [7.LOW LIGHT MODE]

No.	Setting item	Variable range	Initial setting value
1	RED	0~255	30
2	GREEN	0~255	30
3	BLUE	0~255	30

3.5.6 [8.HIGH LIGHT MODE]

No.	Setting item	Variable range	Initial setting value
1	RED	0~255	64
2	BLUE	0~255	64

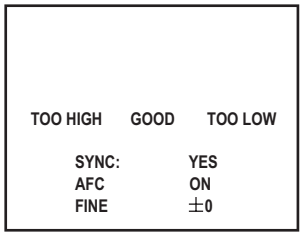
3.6 ADJUSTMENTS PROCEDURE

3.6.1 CHECK ITEM

Item	Measuring instrument	Test point	Adjustment part	Description
B1 POWER SUPPLY	DC voltmeter Signal generator	B1 Connector TP-91 TP-E [MAIN PWB]		(1) Receive the black and white signal. (color off) (2) Connect the DC voltmeter to TP-91 (B1 connector 1 pin) and TP-E (B1 connector 3 pin). (3) Confirm that the voltage is DC134V±2V.

3.6.2 VCO

Item	Measuring instrument	Test point	Adjustment part	Description
IF VCO	Remote control unit		[9.VCO] CW transf. (T111) [MAIN PWB]	• It must not adjust without inputting the RF signal. (1) Receive a broadcast. (2) Select 9.VCO in the SERVICE MENU. (3) Confirm that the color change from "TOO HIGH" to "TOO LOW" by CW transf. on MAIN PWB, and check the "SYNC : YES". (4) Adjust CW transf. until "GOOD" letters turns green. And then confirm that the "SYNC : YES" again. Adjustment can be done in this statement. (5) Push the [EXIT] key to exit the [9.VCO] mode.



3.6.3 RF AGC

Item	Measuring instrument	Test point	Adjustment part	Description
RF AGC	Signal generator Remote control unit		[1.V/C(S)] S21 : AGC ADJ	(1) Receive a black and white signal (colour off). (2) Select <S21>(AGC ADJ) of the 1.V/C(S). (3) Press the [MUTING] key and turn the picture color off. (4) With the [VOLUME (-)] key to get the noise in the screen picture (zero side of setting value). (5) Press the [VOLUME (+)] key several times and step when noise disappears from the screen (at that time, not to increase the value too much). (6) Change to other channels and make sure that there is no irregularity. (7) Press the [MUTING] key and get color out.

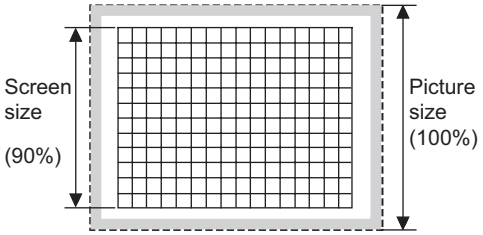
No	Setting item	Variable range	Initial setting value
S21	AGC ADJ	0~127	80

3.6.4 FOCUS

Item	Measuring instrument	Test point	Adjustment part	Description
FOCUS	Signal generator		FOCUS VR [In HVT]	(1) Receive the crosshatch signal. (2) While looking at the screen, adjust the FOCUS VR to the vertical and horizontal lines will be clear and in fine detail. (3) Make sure that the picture is in focus even when the screen gets darkened.

3.6.5 DEFLECTION CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
V. SIZE & V. CENTER	Signal generator Remote control unit		[2.DEF(D)] D03 : V SIZE V. CENTER SW(S401) [MAIN PWB]	(1) Receive the crosshatch signal. (2) Select the <D03>(V SIZE). (3) Adjust the <D03> so that the vertical screen size becomes 90%. (4) Adjust the V' CENTER SW to agree the vertical center with display center.



No	Setting item	Variable range	Initial setting value
S03	V SIZE	0~125	65

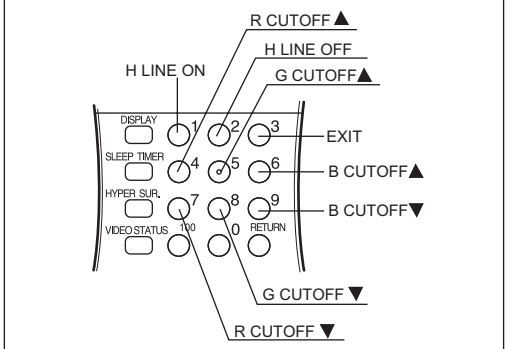
Item	Measuring instrument	Test point	Adjustment part	Description
H. CENTER	Signal generator Remote control unit		[2.DEF(D)] D02 : H POSI	(1) Receive the crosshatch signal. (2) Select <D02>(H POSI). (3) Adjust the <D02> so that left width and right width of the crosshatch screen becomes equal.

No	Setting item	Variable range	Initial setting value
D02	H POSI	0~31	10

3.6.6 VIDEO CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
WHITE BALANCE (LOW LIGHT)	Signal generator Remote control unit		[7.LOW LIGHT] [1.V/C(S)] S11 : R CUTOFF S12 : G CUTOFF S13 : B CUTOFF S01 : BRIGHT SCREEN VR [in HVT]	(1) Receive the black and white signal (color off). (2) Select the 7.LOW LIGHT in the SERVICE MENU. (3) Set the initial setting value of <S11>(R CUTOFF), <S12>(G CUTOFF), <S13>(B CUTOFF) and <S01>(BRIGHT). (4) Display a single horizontal line by pressing the [1] key. (5) Turn the SCREEN VR all the way to the left. (6) Turn the SCREEN VR gradually to the right from the left until either one of the red, blue or green color appears faintly. (7) Adjust the two colors which did not appear until the single horizontal line that is displayed becomes white using the [4] to [9] keys. (8) Turn the SCREEN VR until the single horizontal line is displayed faintly. (9) Press the [2] key to cancel the single horizontal line mode. (10) Adjust the <S01> level to become the black component shines white slightly by [VOLUME] key. (11) Confirm that whether the color ingredient of R,G,or B is visible to the black component, which shines white slightly. (12) When the color ingredient can be seen, two colors other than a visible color is adjusted, and it is made to look white. (13) Return the value of <S01> to initial setting value. **NOTE:** If the [3] key is pressed, it can escape from WHITE BALANCE adjustment mode.

KEY ASSIGNMENT OF REMOTE CONTROL UNIT

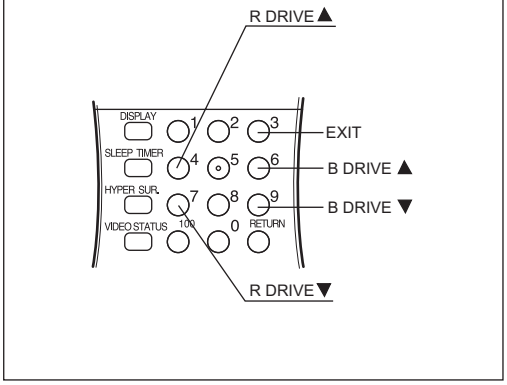


No	Setting item	Variable range	Initial setting value
S11	R CUT OFF	0~255	30
S12	G CUT OFF	0~255	30
S13	B CUT OFF	0~255	30
S01	BRIGHT	0~127	64

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>WHITE BALANCE (HIGH LIGHT)</td><td>Signal generator

Remote control unit</td><td></td><td>[8.HIGH LIGHT]

[1.V/C(S)]
S14 : R DRIVE
S15 : B DRIVE</td><td rowspan="3">(1) Receive the black and white signal (color off).
(2) Select the 8.HIGH LIGHT in the SERVICE MENU.
(3) Set the initial setting value of <S14>(R DRIVE) and <S15>(B DRIVE) with the [4], [6], [7] and [9] keys.
(4) Adjust the screen until it becomes white by using the [4], [6], [7] and [9] keys.

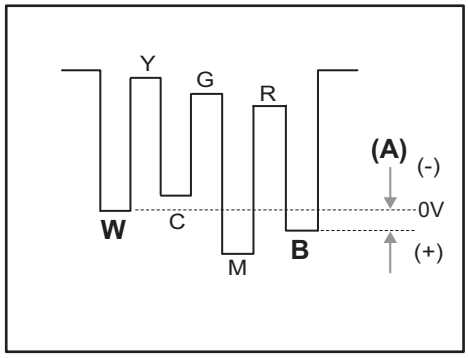
NOTE:
If the [3] key is pressed, it can escape from WHITE BALANCE adjustment mode.</td></tr>
<tr><td colspan="4">KEY ASSIGNMENT OF REMOTE CONTROL UNIT
 

<table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>S14</td><td>R DRIVE</td><td>0~127</td><td>64</td></tr>
<tr><td>S15</td><td>G DRIVE</td><td>0~127</td><td>64</td></tr>
</table></td></tr>
<tr><td>SUB BRIGHT</td><td>Remote control unit</td><td></td><td>[1.V/C(S)]
S01 : BRIGHT</td><td rowspan="2">(1) Receive the broadcast.
(2) Select <S01>(BRIGHT) of the 1.V/C(S).
(3) Set the initial setting value of the <S01> with the [VOLUME (-/+)] key.
(4) If the brightness is not the best with the initial setting value, make fine adjustment of the <S01> until you get the optimum brightness.</td></tr>
<tr><td colspan="4"><table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>S01</td><td>BRIGHT</td><td>0~127</td><td>64</td></tr>
</table></td></tr>
<tr><td>SUB CONTRAST</td><td>Remote control unit</td><td></td><td>[1.V/C(S)]
S02 : PICTURE</td><td rowspan="2">(1) Receive the broadcast.
(2) Select <S02>(PICTURE) of the 1.V/C(S).
(3) Set the initial setting value of the <S02> with the [VOLUME (-/+)] key.
(4) If the contrast is not the best with the initial setting value, make fine adjustment of the <S02> until you get the optimum contrast.</td></tr>
<tr><td colspan="4"><table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>S02</td><td>PICTURE</td><td>0~127</td><td>65</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>SUB COLOR</td><td>Signal generator

Oscilloscope

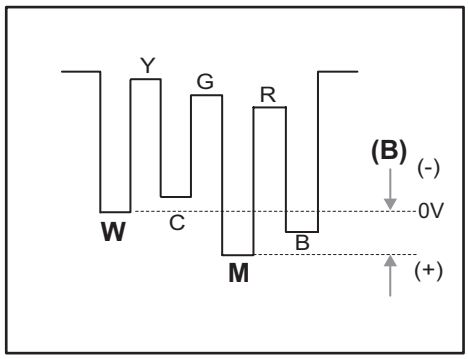
Remote control unit</td><td>TP-B
TP-E
[CRT SOCKET PWB]</td><td>[1.V/C(S)]
S03 : COLOR</td><td>[Method of adjustment without measuring instrument]
(1) Receive the broadcast.
(2) Select <S03>(COLOR) of the 1.V/C(S).
(3) Set the initial setting value of the <S03> with the [VOLUME (-/+)] key.
(4) If the color is not the best with the Initial setting value, make fine adjustment of the <S03> until you get the optimum color.

[Method of adjustment using measuring instrument]
(1) Receive the full field color bar signal (75% white).
(2) Select <S03>(COLOR) of the 1.V/C(S).
(3) Set the initial setting value of the <S03> with the [VOLUME (-/+)] key.
(4) Connect the oscilloscope between TP-B and TP-E.
(5) Adjust <S03> and bring the value of (A) in the illustration to +10V.</td></tr>
<tr><td colspan="4"> 

<table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>S03</td><td>COLOR</td><td>0~127</td><td>41</td></tr>
</table></td></tr>
<tr><td>SUB TINT</td><td>Signal generator

Oscilloscope

Remote control unit</td><td>TP-B
TP-E
[CRT SOCKET PWB]</td><td>[1.V/C(S)]
S04 : TINT</td><td>[Method of adjustment without measuring instrument]
(1) Receive the broadcast.
(2) Select <S04>(TINT) of the 1.V/C.
(3) Set the initial setting value of the <S04> with the [VOLUME (-/+)] key.
(4) If the tint is not the best with the initial setting value, make fine adjustment of the <S04> until you get the optimum tint.

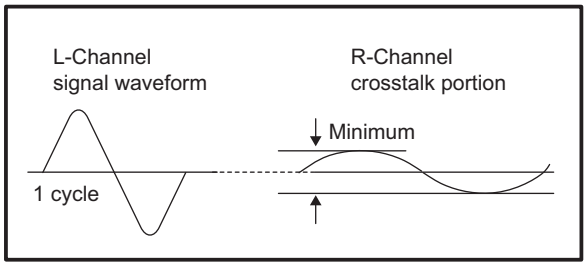
[Method of adjustment using measuring instrument]
(1) Receive the full field color bar signal (75% white).
(2) Select <S04>(TINT) of the 1.V/C.
(3) Set the initial setting value of the <S04> with the [VOLUME (-/+)] key.
(4) Connect the oscilloscope between TP-B and TP-E.
(5) Adjust <S04> and bring the value of (B) in the illustration to +14V.</td></tr>
<tr><td colspan="4"> 

<table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>S04</td><td>TINT</td><td>0~127</td><td>63</td></tr>
</table></td></tr>
</table>

3.6.7 MTS CIRCUIT

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>MTS INPUT LEVEL</td><td>Remote control unit</td><td></td><td>[3.SOUND(A)]
A01 : IN LEVEL</td><td rowspan="2">(1) Select the <A01>(IN LEVEL) of the 3.SOUND.
(2) Verify that the <A01> is set at its initial setting value.</td></tr>
<tr><td colspan="4">
<table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>A01</td><td>IN LEVEL</td><td>0~63</td><td>036</td></tr>
</table>
</td></tr>
<tr><td>MTS SEPARATION</td><td>TV audio multiplex Signal generator

Oscilloscope

Remote control unit</td><td>R OUT
L OUT
[AUDIO OUT]</td><td>[3.SOUND(A)]
A06 : LOW SEP
A07 : HI SEP</td><td rowspan="2">(1) Input the stereo L signal (300Hz) from the TV audio multiplex signal generator to the antenna terminal.
(2) Connect an oscilloscope to R OUT pin of the AUDIO OUT, and display one cycle portion of the 300Hz signal.
(3) Select the <A06>(LOW SEP) of the SOUND MODE.
(4) Set the initial setting value of the <A06> with the [VOLUME (-/+)] key.Adjust the <A06> so that the stroke element of the 300Hz signal will become minimum.
(5) Change the connection of the oscilloscope to L OUT pin of the AUDIO OUT, and enlarge the voltage axis.
(6) Change the signal to 3kHz, and similarly adjust the <A07>(HI SEP).</td></tr>
<tr><td colspan="4">


<table>
<tr><th>No</th><th>Setting item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td>A06</td><td>LOW SEP</td><td>0~63</td><td>008</td></tr>
<tr><td>A07</td><td>HI SEP</td><td>0~63</td><td>026</td></tr>
</table>
</td></tr>
</table>

3.6.8 PURITY AND CONVERGENCE

PURITY ADJUSTMENT

(1) Demagnetize CRT with the demagnetizer.

(2) Loosen the retainer screw of the deflection yoke.

(3) Remove the wedges.

(4) Input a green raster signal from the signal generator, and turn the screen to green raster.

(5) Move the deflection yoke backward.

(6) Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)

(7) Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)

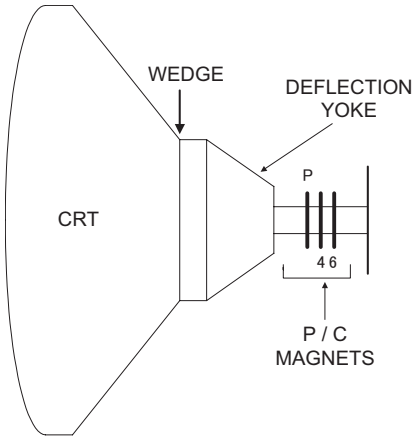
(8) Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.

(9) Insert the wedge to the top side of the deflection yoke so that it will not move.

(10) Input a crosshatch signal.

(11) Verify that the screen is horizontal.

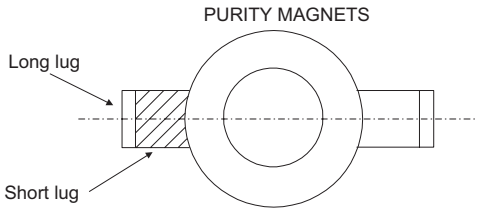
(12) Input red and blue raster signals, and make sure that purity is properly adjusted.



P/C MAGNETS

P : PURITY MAGNET
4 : 4 POLES (convergence magnets)
6 : 6 POLES (convergence magnets)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

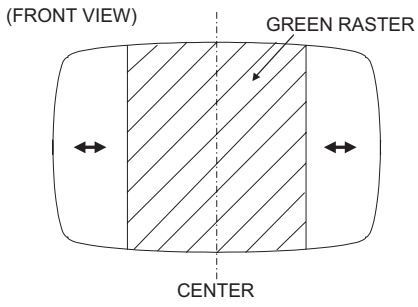


Fig.3

STATIC CONVERGENCE ADJUSTMENT

(1) Input a crosshatch signal.

(2) Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).

(3) Using 6-pole convergence magnets, overlap the magenta (red/blue) and green lines in the center of the screen and turn them to white.

(4) Repeat 2 and 3 above, and make best convergence.

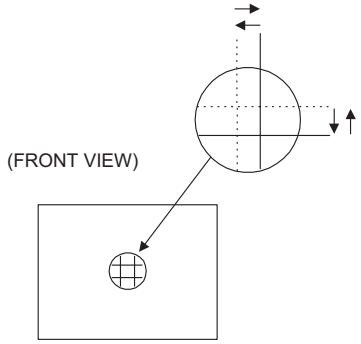


Fig.1

DYNAMIC CONVERGENCE ADJUSTMENT

(1) Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)

(2) Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)

(3) Repeat 1 and 2 above, and make best convergence.

- After adjustment, fix the wedge at the original position. Fasten the retainer screw of the deflection yoke. Fix the 6 magnets with glue.

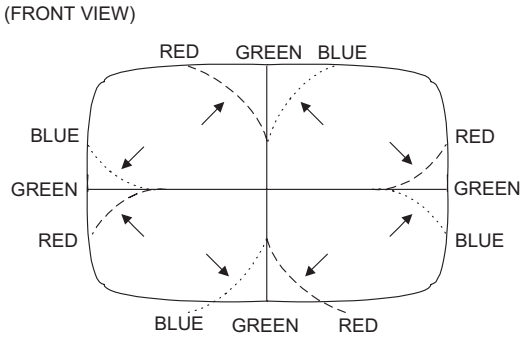


Fig.2

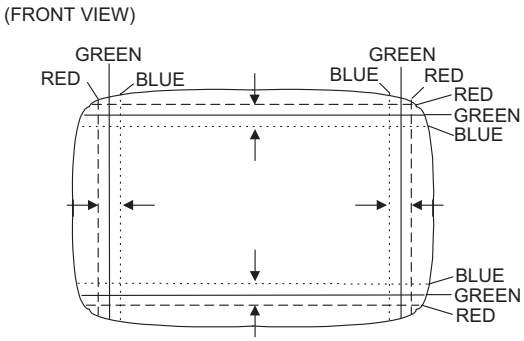


Fig.3

3.6.9 HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

3.6.9.1 HIGH VOLTAGE HOLD DOWN CIRCUIT

After repairing the high voltage hold down circuit shown in Fig.1.
This circuit shall be checked to operate correctly.

3.6.9.2 CHECKING OF THE HIGH VOLTAGE HOLD DOWN CIRCUIT

(1) Turn the power switch to on.
(2) As shown in Fig. 1, set the resistor between **[X]** connector **[1]** and **[3]**.
(3) Make sure that the screen picture disappears.
(4) Temporarily unplug the power plug.
(5) Remove the resistor replaced **[X]** connector **[1]** and **[3]**.
(6) Again plug the power plug, make sure that the normal picture is displayed on the screen.

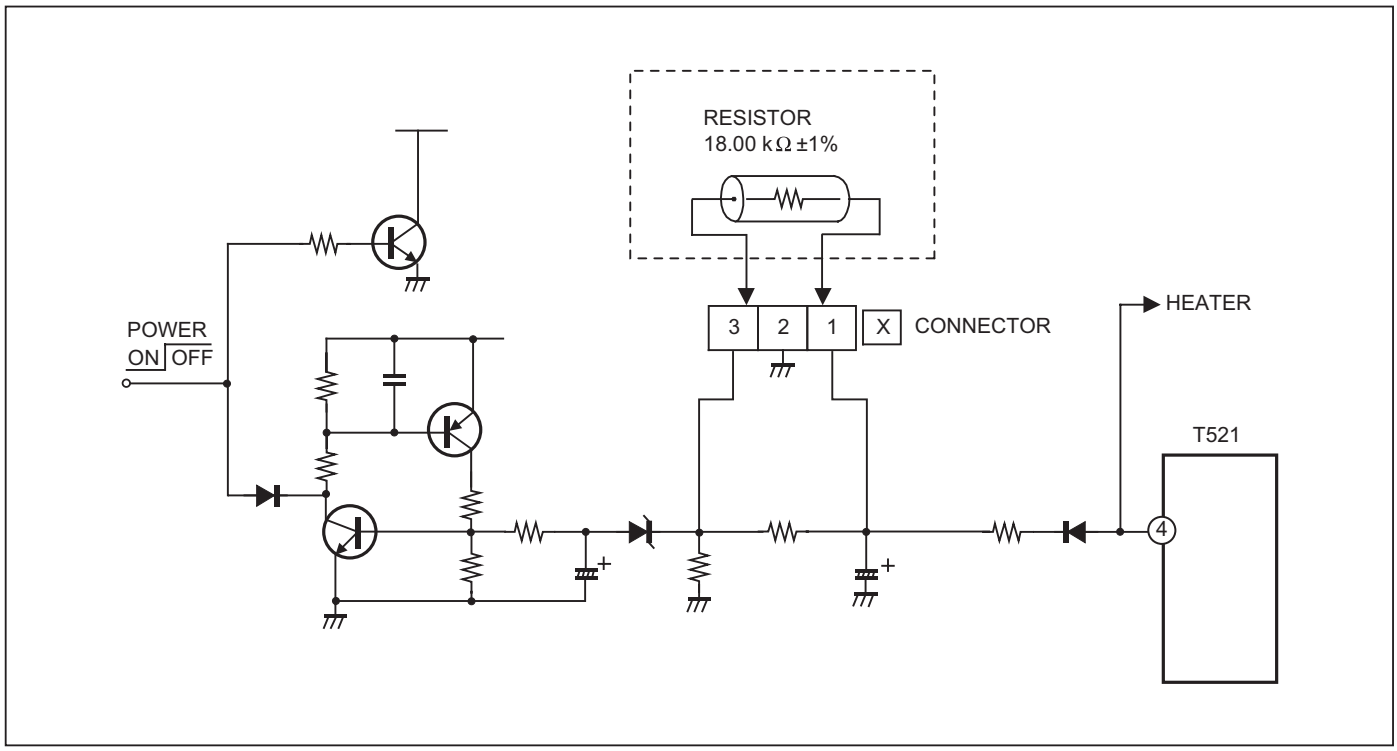


Fig.1

AV-20D304

JVC SERVICE & ENGINEERING COMPANY OF AMERICA

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(No.52103)

Printed in Japan

200302WPC

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS	
CR	Carbon Resistor
FR	Fusible Resistor
PR	Plate Resistor
VR	Variable Resistor
HV R	High Voltage Resistor
MF R	Metal Film Resistor
MG R	Metal Glazed Resistor
MP R	Metal Plate Resistor
OM R	Metal Oxide Film Resistor
CMF R	Coating Metal Film Resistor
UNF R	Non-Flammable Resistor
CH V R	Chip Variable Resistor
CH MG R	Chip Metal Glazed Resistor
COMP. R	Composition Resistor
LPTC R	Linear Positive Temperature Coefficient Resistor

CAPACITORS	
C CAP.	Ceramic Capacitor
E CAP.	Electrolytic Capacitor
M CAP.	Mylar Capacitor
CH CAP.	Chip Capacitor
HV CAP.	High Voltage Capacitor
MF CAP.	Metalized Film Capacitor
MM CAP.	Metalized Mylar Capacitor
MP CAP.	Metalized Polystyrol Capacitor
PP CAP.	Polypropylene Capacitor
PS CAP.	Polystyrol Capacitor
TF CAP.	Thin Film Capacitor
MPP CAP.	Metalized Polypropylene Capacitor
TAN. CAP.	Tantalum Capacitor
CH C CAP.	Chip Ceramic Capacitor
BP E CAP.	Bi-Polar Electrolytic Capacitor
CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

RESISTORS									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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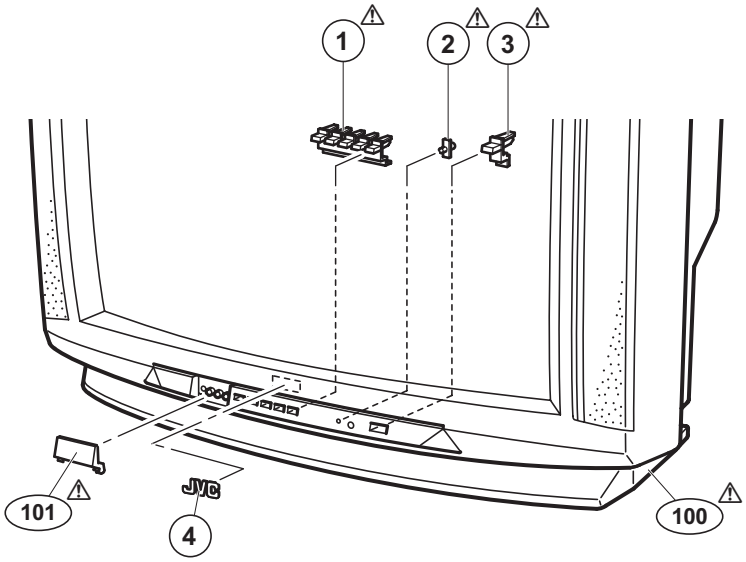
EXPLODED VIEW PARTS LIST - 1

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	1	GQ30025-002A-A	CONTROL KNOB		
⚠	2	LC30191-004A-A	REMOCON LENS		
⚠	3	GQ30026-002A-A	POWER KNOB		
	4	CM43094-009-H	JVC MARK		
⚠	100	GQ10020-001B-A	F CABINET ASSY	Inc. 101	
⚠	101	GQ30024-002A-A	DOOR		

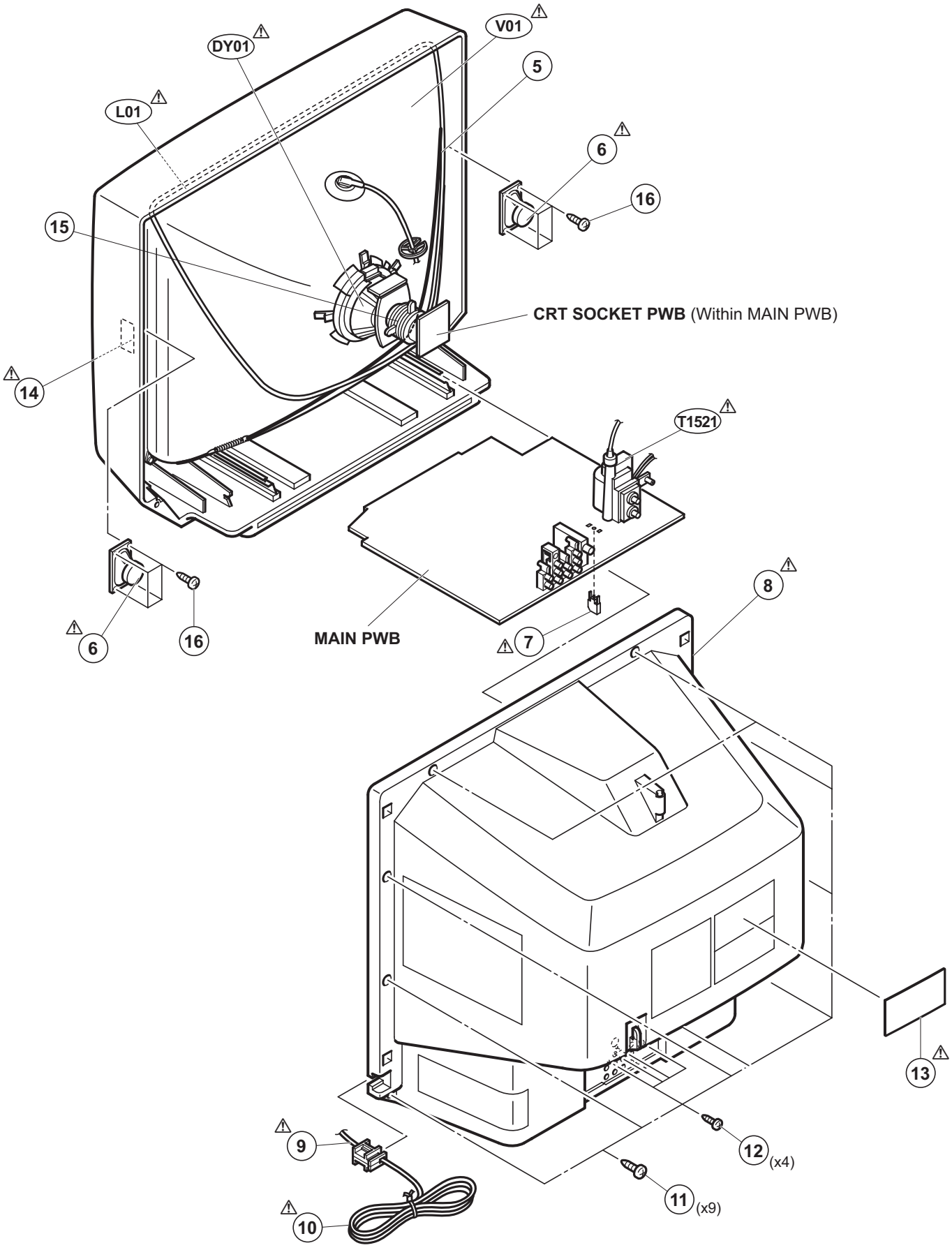
EXPLODED VIEW - 1



EXPLODED VIEW PARTS LIST - 2

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	V01	A51KRE89X(DT)	PICTURE TUBE		
⚠	DY01	QQD0011-001	DEF YOKE		
⚠	L01	QQW0133-001	DEG COIL		
⚠	T1521	QQH0128-001	FB TRANSF		
	5	CHGB0016-0H	BRAIDED ASSY		
⚠	6	QAS0054-001	SPEAKER	(x2)SP01,02	
⚠	7	CM48144-001-A	PB STOPPER		
⚠	8	GQ10013-001B-A	REAR COVER		
⚠	9	LC20106-001D-A	POWER CORD CLAM		
⚠	10	QMPD390-200-JS	POWER CORD(US/CA)	2m BLACK	
	11	QYSBSFG4016Z	TAP SCREW	4mm x 16mm(x9)	
	12	QYSBSB3010Z	TAP SCREW	3mm x 10mm(x4)	
⚠	13	GQ30032-001A-A	RATING LABEL		
⚠	14	GQ30034-001B-A	WARNING LABEL		
	15	A75034-B	PC MAGNET		
	16	QYSBSB4012Z	TAP SCREW	4mm x 12mm(x8)	

EXPLODED VIEW - 2



PRINTED WIRING BOARD PARTS LIST

MAIN PW BOARD ASS'Y(SFE-1031A-M2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC1101	M52342SP	IC		
IC1201	TM8812CPDNG4N35	IC(MCU)		
IC1251	TC90A49P	IC		
⚠IC1421	AN5522	IC		
⚠IC1602	LA4446	IC		
IC1603	CXA2134Q-X	IC		
IC1702	AT24WC-20D304	IC	(SERVICE)	
IC1703	S-80840CNY-T	IC		
IC1704	AN78L05-T	IC		
IC1751	GP1UM281QK	IR DETECT UNIT		
IC1851	TA1218AN	IC		
IC1901	STR-G5624A/F8	IC		
IC1921	AN7809F	IC		
IC1922	UPC7805AHF	IC		
Q1001	UN2212-X	DIGI TRANSISTOR		
Q1101	2SC5083/L-P/-T	TRANSISTOR		
Q1131	2SB709A/QR/-X	TRANSISTOR		
Q1161	2SD601A/QR/-X	TRANSISTOR		
Q1211	2SD601A/QR/-X	TRANSISTOR		
Q1232	2SD601A/QR/-X	TRANSISTOR		
Q1233	2SD601A/QR/-X	TRANSISTOR		
Q1251	2SD601A/QR/-X	TRANSISTOR		
Q1252	2SD601A/QR/-X	TRANSISTOR		
Q1281	2SB709A/QR/-X	TRANSISTOR		
Q1282	2SD601A/QR/-X	TRANSISTOR		
Q1283	2SB709A/QR/-X	TRANSISTOR		
Q1291	2SB709A/QR/-X	TRANSISTOR		
Q1292	2SD601A/QR/-X	TRANSISTOR		
Q1293	2SB709A/QR/-X	TRANSISTOR		
Q1301	2SC4544-LB	POW TRANSISTOR		
Q1311	2SC4544-LB	POW TRANSISTOR		
Q1321	2SC4544-LB	POW TRANSISTOR		
Q1331	2SD601A/QR/-X	TRANSISTOR		
Q1332	2SD601A/QR/-X	TRANSISTOR		
Q1352	2SD601A/QR/-X	TRANSISTOR		
Q1501	2SC4212/Z1/	TRANSISTOR		
⚠Q1521	2SD2634-YD	TRANSISTOR	H OUT	
Q1602	2SD601A/QR/-X	TRANSISTOR		
Q1681	2SD601A/QR/-X	TRANSISTOR		
Q1682	2SD601A/QR/-X	TRANSISTOR		
Q1683	2SD601A/QR/-X	TRANSISTOR		
Q1684	2SD601A/QR/-X	TRANSISTOR		
Q1701	2SB709A/QR/-X	TRANSISTOR		
Q1751	UN2112-X	DIGI TRANSISTOR		
Q1851	2SB709A/QR/-X	TRANSISTOR		
Q1921	2SD1383K/AB/-X	TRANSISTOR		
Q1922	2SC2785/JH/-T	SI TRANSISTOR		
Q1923	2SA1037AK/QR/-X	TRANSISTOR		
Q1924	2SA1208/ST/Z1-T	TRANSISTOR		
D1331	1SS133-T2	SI DIODE		
D1352	MTZJ9.1C-T2	Z.DIODE I M		
D1353	1SS133-T2	SI DIODE		
D1365	1SS133-T2	SI DIODE		
D1366	1SS133-T2	SI DIODE		
D1367	1SS133-T2	SI DIODE		
D1368	MTZJ5.1B-T2	Z DIODE		
D1369	MTZJ5.1B-T2	Z DIODE		
D1370	MTZJ5.1B-T2	Z DIODE		
D1401	1SR35-400A-T2	SI DIODE		
D1402	MTZJ75-T2	Z DIODE		
D1501	MTZJ3.3A-T2	Z DIODE		
D1521	1SR35-400A-T2	SI DIODE		
D1522	RH1S-T3	SI DIODE		
D1523	1SR35-400A-T2	SI DIODE		
D1524	RGP10J-5025-T3	SI DIODE		
D1525	MTZJ5.6A-T2	Z DIODE		
D1526	MA4068N/Z1/-T2	Z DIODE		
D1661	MTZJ9.1C-T2	Z.DIODE I M		
D1681	MTZJ9.1C-T2	Z.DIODE I M		
D1682	MTZJ9.1C-T2	Z.DIODE I M		
D1683	MTZJ9.1C-T2	Z.DIODE I M		
D1684	MTZJ9.1C-T2	Z.DIODE I M		
D1685	MTZJ9.1C-T2	Z.DIODE I M		
D1686	MTZJ9.1C-T2	Z.DIODE I M		
D1687	MTZJ9.1C-T2	Z.DIODE I M		
D1688	MTZJ9.1C-T2	Z.DIODE I M		
D1705	1SS133-T2	SI DIODE		
D1751	LG22440	LED	POWER / ON TIMER	
D1801	MTZJ9.1C-T2	Z.DIODE I M		
D1802	MTZJ9.1C-T2	Z.DIODE I M		
D1803	MTZJ9.1C-T2	Z.DIODE I M		
D1804	MTZJ9.1C-T2	Z.DIODE I M		
D1807	MTZJ9.1C-T2	Z.DIODE I M		
D1831	MTZJ9.1C-T2	Z.DIODE I M		
D1832	MTZJ9.1C-T2	Z.DIODE I M		
D1833	MTZJ9.1C-T2	Z.DIODE I M		
D1834	MTZJ9.1C-T2	Z.DIODE I M		
⚠D1901	GSIB460-S1	BRIDGE DIODE		
D1902	RGP10J-5025-T3	SI DIODE		
D1903	RGP10J-5025-T3	SI DIODE		
D1904	RGP10J-5025-T3	SI DIODE		
D1905	SARS01-T2	SI DIODE		
D1907	MA700A-T2	SB DIODE		
D1908	MTZJ15C-T2	Z DIODE		
D1921	1SR35-400A-T2	SI DIODE		
D1922	1SR35-400A-T2	SI DIODE		
D1923	1SR35-400A-T2	SI DIODE		
D1924	1SR35-400A-T2	SI DIODE		
D1925	1SS133-T2	SI DIODE		
D1926	RU3AM-LFC4	SI DIODE		
D1927	RU3YX-LFC4	SI DIODE		
D1928	RU3YX-LFC4	SI DIODE		
D1929	MTZJ7.5A-T2	Z DIODE		
D1930	1SS133-T2	SI DIODE		
D1931	1SS133-T2	SI DIODE		
D1932	MTZJ33B-T2	Z DIODE		
D1933	1N4002G-T2	SI DIODE		
C1001	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C1002	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1003	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C1004	QETN1AM-477Z	E CAPACITOR	470uF 10V M	
C1005	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1101	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1102	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1104	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1105	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1106	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1107	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1113	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1114	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1116	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C1117	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1118	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1119	NDC31HJ-681X	C CAPACITOR	680pF 50V J	
C1120	QETN1HM-474Z	E CAPACITOR	0.47uF 50V M	
C1124	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1131	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1161	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1162	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1163	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C1164	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C1165	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1166	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1202	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C1203	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C1211	QETN1HM-476Z	E CAPACITOR	47uF 50V M	
C1221	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1222	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C1223	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1233	NDC31HJ-680X	C CAPACITOR	68pF 50V J	
C1237	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1241	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1243	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1244	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1247	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C1252	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C1253	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C1254	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C1261	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1262	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1263	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1264	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1265	QETN1HM-474Z	E CAPACITOR	0.47uF 50V M	
C1266	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1267	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1268	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1269	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1270	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1272	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1273	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1274	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C1275	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1276	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	

⚠Ref No.	Part No.	Part Name	Description	Local
C1277	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1278	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1283	NDC31HJ-330X	C CAPACITOR	33pF 50V J	
C1293	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C1302	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C1312	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C1322	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C1331	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C1341	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
⚠C1343	QCZ0121-102	C CAPACITOR	1000pF 3KV	
C1352	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1354	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1361	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1362	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1401	QFVF1HJ-474Z	MF CAPACITOR	0.47uF 50V J	
C1402	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C1403	QENC1CM-106Z	BP E CAPACITOR	10uF 16V M	
C1404	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C1405	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1406	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C1407	QETN1VM-107Z	E CAPACITOR	100uF 35V M	
C1409	QFLC2AK-104Z	M CAPACITOR	0.1uF 100V K	
C1410	QFLC2AK-104Z	M CAPACITOR	0.1uF 100V K	
C1411	QETM1VM-228	E CAPACITOR	2200uF 35V M	
C1412	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C1501	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1502	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1503	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1504	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C1505	NCB31AK-474X	C CAPACITOR	0.47uF 10V K	
C1506	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1507	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1508	QCB32HK-151Z	C CAPACITOR	150pF 500V K	
C1509	QCB32HK-331Z	C CAPACITOR	330pF 500V K	
C1510	QETN2EM-225Z	E CAPACITOR	2.2uF 250V M	
C1521	QCZ0325-821	C CAPACITOR	820pF 2kV K	
C1522	QFZ0198-562	MPP CAPACITOR	5600pF 1.5KV	
C1523	QFZ0197-534	MPP CAPACITOR	0.53uF 250V J	
C1525	QEZ0203-107	E CAPACITOR	100uF 160V M	
C1526	QFLC1HJ-823Z	M CAPACITOR	0.082uF 50V J	
C1527	QETN2EM-106Z	E CAPACITOR	10uF 250V M	
C1528	QETN1VM-108Z	E CAPACITOR	1000uF 35V M	
C1529	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C1530	QFLC2AJ-103Z	M CAPACITOR	0.01uF 100V J	
C1614	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C1616	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C1617	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C1618	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C1619	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C1620	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C1622	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C1623	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C1624	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C1625	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C1626	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C1627	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C1651	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C1652	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C1653	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C1654	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C1655	NCB31HK-123X	C CAPACITOR	0.012uF 50V K	
C1656	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C1657	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1658	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1659	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C1660	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1661	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1662	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C1663	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C1664	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C1665	NCB31HK-272X	C CAPACITOR	2700pF 50V K	
C1666	NCB31HK-473X	C CAPACITOR	0.047uF 50V K	
C1667	QETN1HM-335Z	E CAPACITOR	3.3uF 50V M	
C1668	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C1669	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1670	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C1671	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1672	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1673	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C1674	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C1675	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C1676	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C1677	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C1681	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1682	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1683	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1684	QETN1HM-106Z	E CAPACITOR	10uF 50V M	

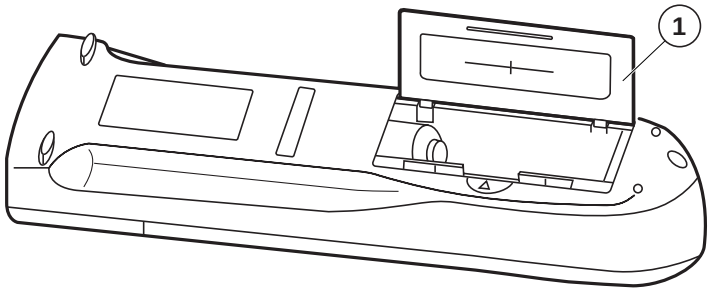
⚠Ref No.	Part No.	Part Name	Description	Local
C1685	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1686	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1687	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1688	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1689	QETN1CM-336Z	E CAPACITOR	33uF 16V M	
C1701	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C1702	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1703	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1704	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1705	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1708	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C1709	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C1711	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1712	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1716	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1751	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1801	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1802	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1803	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C1804	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1807	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1815	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1831	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C1832	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C1833	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C1834	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1851	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1852	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1853	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1854	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1855	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1856	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1857	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C1858	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1859	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1860	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1861	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C1862	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
⚠C1901	QFZ9072-104	MM CAPACITOR	0.1uF AC250V K	
⚠C1902	QFZ9072-104	MM CAPACITOR	0.1uF AC250V K	
C1903	QEZ0561-477	E CAPACITOR	470uF 200V M	
⚠C1904	QCZ9054-102	C CAPACITOR	1000pF AC250V Z	
⚠C1905	QCZ9054-102	C CAPACITOR	1000pF AC250V Z	
C1907	QETN1HM-476Z	E CAPACITOR	47uF 50V M	
C1908	QCZ0340-222	C CAPACITOR	2200pF 2kV K	
C1909	NCB31HK-122X	C CAPACITOR	1200pF 50V K	
C1910	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C1911	QFP32GJ-103Z	PP CAPACITOR	0.01uF 400V J	
C1921	QETN1EM-477Z	E CAPACITOR	470uF 25V M	
C1923	QEZ0203-107	E CAPACITOR	100uF 160V M	
C1924	QETN2CM-476Z	E CAPACITOR	47uF 160V M	
C1925	QETN1CM-108Z	E CAPACITOR	1000uF 16V M	
C1926	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C1927	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C1929	QCZ0340-102	C CAPACITOR	1000pF 2kV K	
C1930	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C1931	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C1932	QETN0JM-107Z	E CAPACITOR	100uF 6.3V M	
C1933	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C1935	QETN1CM-476Z	E CAPACITOR	47uF 16V M	
C1940	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1941	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C1942	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C1943	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C1944	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C1945	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
⚠C1991	QCZ9074-103	C CAPACITOR	0.01uF 250V	
⚠C1992	QCZ9074-103	C CAPACITOR	0.01uF 250V	
R1003	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R1004	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R1005	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R1006	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R1008	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J	
R1101	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R1102	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R1103	QRE121J-101Y	C RESISTOR	100Ω 1/2W J	
R1104	NRSA63J-180X	MG RESISTOR	18Ω 1/16W J	
R1105	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J	
R1111	NRSA63J-394X	MG RESISTOR	390kΩ 1/16W J	
R1112	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R1113	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R1115	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R1116	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J	
R1117	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R1131	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R1132	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	

⚠Ref No.	Part No.	Part Name	Description Local
R1133	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J
R1134	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R1135	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1161	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1163	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1164	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1165	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1166	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1167	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1168	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1169	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J
R1171	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1201	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1212	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R1215	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R1216	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R1217	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1227	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R1231	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J
R1232	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R1233	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1234	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R1235	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1251	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1252	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1253	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1254	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J
R1255	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R1256	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R1257	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R1261	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1262	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1263	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1264	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J
R1282	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R1283	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J
R1285	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R1286	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1287	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1288	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R1292	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R1293	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1295	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R1296	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1297	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1298	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R1301	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R1302	QRL029J-123	OMF RESISTOR	12kΩ 2W J
R1303	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K
R1304	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1305	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R1306	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1311	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R1312	QRL029J-123	OMF RESISTOR	12kΩ 2W J
R1313	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K
R1314	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1315	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R1316	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1321	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R1322	QRL029J-123	OMF RESISTOR	12kΩ 2W J
R1323	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K
R1324	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1325	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R1326	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1331	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1332	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1333	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1354	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R1356	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1359	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1360	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R1364	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1365	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1366	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1401	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1402	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1403	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1405	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1406	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R1407	QRE121J-681Y	C RESISTOR	680Ω 1/2W J
R1408	QRE121J-681Y	C RESISTOR	680Ω 1/2W J
R1409	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J
R1411	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1412	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R1414	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1416	QRE121J-102Y	C RESISTOR	1kΩ 1/2W J
R1501	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R1502	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R1504	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R1505	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R1506	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1507	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J
R1508	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1509	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R1510	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J
R1511	QRL039J-272	OMF RESISTOR	2.7kΩ 3W J
R1512	QRL039J-332	OMF RESISTOR	3.3kΩ 3W J
R1521	QRE121J-220Y	C RESISTOR	22Ω 1/2W J
R1523	QRL039J-152	OMF RESISTOR	1.5kΩ 3W J
R1524	QRE121J-334Y	C RESISTOR	330kΩ 1/2W J
R1525	QRE121J-184Y	C RESISTOR	180kΩ 1/2W J
R1526	QRK129J-150	UNF C RESISTOR	15Ω 1/2W J
R1527	QRX01GJ-R82	MF RESISTOR	0.82Ω 1W J
R1528	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J
R1529	QRK126J-4R7X	UNF C RESISTOR	4.7Ω 1/2W J
R1530	QRX029J-1R5	MF RESISTOR	1.5Ω 2W J
R1531	NRZ0032-7151X	CMF RESISTOR	7.15kΩ
R1533	NRZ0032-3241X	CMF RESISTOR	3.24kΩ
R1541	QRE121J-683Y	C RESISTOR	68kΩ 1/2W J
R1614	QRL039J-100	OMF RESISTOR	10Ω 3W J
R1615	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1616	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1617	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1618	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1619	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1620	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1621	QRE121J-4R7Y	C RESISTOR	4.7Ω 1/2W J
R1622	QRE121J-4R7Y	C RESISTOR	4.7Ω 1/2W J
R1625	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1627	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1628	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R1629	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R1631	QRX029J-3R3	MF RESISTOR	3.3Ω 2W J
R1651	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1652	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1653	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J
R1654	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R1655	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R1656	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1657	NRSA63F-623X	MG RESISTOR	62kΩ 1/16W F
R1658	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R1659	NRSA63J-302X	MG RESISTOR	3kΩ 1/16W J
R1661	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R1662	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R1663	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R1664	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1665	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1666	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1667	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1681	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R1682	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R1683	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1684	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1685	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1686	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1687	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R1688	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R1691	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R1692	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R1701	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1702	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1703	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1704	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R1705	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R1706	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R1707	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1708	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1709	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1714	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R1715	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1718	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1720	QRJ149J-1R0	UNF C RESISTOR	1Ω 1/4W J
R1721	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1729	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R1731	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1732	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1733	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R1734	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R1739	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R1740	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1751	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1752	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1753	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R1754	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R1755	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R1756	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R1757	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1758	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1764	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1765	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1766	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1767	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R1768	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R1769	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1770	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1771	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R1772	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1773	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1774	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1775	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1776	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1777	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1778	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1801	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R1802	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R1803	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R1804	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R1805	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1821	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J
R1831	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R1832	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R1833	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R1834	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1835	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1836	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1851	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1852	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1853	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1854	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1855	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R1856	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1857	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R1858	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1859	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1860	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1861	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R1862	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R1863	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
⚠R1901	QRF074K-R47	UNF WW RESISTOR	0.47Ω 7W K
R1902	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J
R1903	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J
R1904	QRT029J-R22	MF RESISTOR	0.22Ω 2W J
R1905	QRT029J-R22	MF RESISTOR	0.22Ω 2W J
R1906	QRE121J-2R2Y	C RESISTOR	2.2Ω 1/2W J
R1907	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J
R1908	QRK126J-681X	UNF C RESISTOR	680Ω 1/2W J
R1910	QRE121J-684Y	C RESISTOR	680kΩ 1/2W J
R1911	QRG01GJ-470	OMF RESISTOR	47Ω 1W J
R1922	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R1923	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R1924	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J
R1925	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J
R1926	QRT029J-1R2	MF RESISTOR	1.2Ω 2W J
R1927	QRT029J-1R2	MF RESISTOR	1.2Ω 2W J
R1928	QRE121J-272Y	C RESISTOR	2.7kΩ 1/2W J
R1929	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J
R1930	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J
R1932	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1933	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R1934	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R1935	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R1936	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J
R1938	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J
R1939	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J
R1941	QRG029J-180	OMF RESISTOR	18Ω 2W J
R1942	QRE121J-5R6Y	C RESISTOR	5.6Ω 1/2W J
R1943	QRE121J-820Y	C RESISTOR	82Ω 1/2W J
⚠R1991	QRZ9041-275	C RESISTOR	2.7MΩ 1/2W K
L1101	QQLZ014-R39	COIL	0.39uH 100mA L
L1131	QQL244K-220Z	COIL	22uH K
L1161	QQL244K-220Z	COIL	22uH K
L1232	QQL244K-560Z	COIL	56uH K
L1251	QQL244K-4R7Z	COIL	4.7uH K
L1281	QQL244K-150Z	COIL	15uH K
L1291	QQL244K-150Z	COIL	15uH K
L1341	QQL03BJ-390Z	P COIL	39uH J
L1921	QQL26AK-470Z	COIL	47uH K
L1922	QQL26AK-470Z	COIL	47uH K
T1111	QQR0907-001	IFT	
T1501	CE42034-002	HOR DRIVE TRANS	

⚠Ref No.	Part No.	Part Name	Description Local
⚠T1901	QQT0355-001	POWER TRANSF	
⚠T1921	QQS0158-001	SW TRANSF	
CF1001	QAX0349-001	C TRAP	
CF1131	QAX0639-001Z	C TRAP	4.500MHz
CF1161	QAX0642-001Z	C FILTER	4.500MHz
CN100C	QGA2501F1-06	CONNECTOR	W-B (1-6)
CN100S	QGA2501C5-04Z	CONNECTOR	W-B (1-4)
CN100T	CHGC05-480	CONNECTOR WIRE	
CN100U	CHGC04-400	CONNECTOR ASSY	
CN10B1	CH41169-R03Y	EH POST HEADER	
CN10E1	CHGT0015-0B	CONNECTOR ASSY	
CN10HV	QGZ5004C1-06	CONNECTOR	(1-6)
⚠CN1DEG	QGZ5004C1-02	CONNECTOR	(1-2)
CN1HHS	CH41169-R03Y	EH POST HEADER	
⚠F1901	QMF51N1-5R0-J5	FUSE	5A AC125V
⚠FC1901	CEMG002-001Z	FUSE CLIP	(x2)
⚠H1002	LC30381-001A	HEAT SINK/FE-P/	
⚠H1602	CEHE014-001WU	HEAT SINK	
⚠HS1004	LC31696-001A	HEAT SINK/AL-F/	
⚠HS1009	LC31678-001A	HEAT SINK/AL-F/	
J1001	QNZ0454-001	AV JACK	S / V / L / R IN
J1002	QNN0348-001	PIN JACK	L / R OUT
J1003	QNN0349-002	PIN JACK	V / L / R IN
J1004	QNN0348-001	PIN JACK	L / R IN
J1005	CEMN065-001	PIN JACK	V IN
J1006	CEMN065-002	PIN JACK	L IN
J1007	CEMN072-003	PIN JACK	R IN
J1008	QNS0155-001	3.5 JACK	HEADPHONE
K1001	QQR0582-001Z	FERRITE BEADS	
K1101	QQR0582-001Z	FERRITE BEADS	
K1251	QQR0582-001Z	FERRITE BEADS	
K1253	QQR0582-001Z	FERRITE BEADS	
K1254	QQR0582-001Z	FERRITE BEADS	
K1401	QQR0582-001Z	FERRITE BEADS	
K1701	QQR0582-001Z	FERRITE BEADS	
K1702	QQR0582-001Z	FERRITE BEADS	
K1901	QQR0582-001Z	FERRITE BEADS	
K1902	QQR0582-001Z	FERRITE BEADS	
K1903	QQR0582-001Z	FERRITE BEADS	
K1904	QQR0582-001Z	FERRITE BEADS	
K1921	QQR0582-001Z	FERRITE BEADS	
K1922	QQR0582-001Z	FERRITE BEADS	
K1923	QQR0582-001Z	FERRITE BEADS	
⚠LF1901	QQR0527-003	LINE FILTER	
⚠RY1901	QSK0085-001	RELAY	
S1401	QSL4A13-C02	LEVER SWITCH	V. CENTER
S1751	QSW0619-003Z	TACT SWITCH	POWER
S1752	QSW0619-003Z	TACT SWITCH	VOL +
S1753	QSW0619-003Z	TACT SWITCH	VOL -
S1754	QSW0619-003Z	TACT SWITCH	CH +
S1755	QSW0619-003Z	TACT SWITCH	CH -
S1756	QSW0619-003Z	TACT SWITCH	MENU
SF1101	QAX0723-001	SAW FILTER	
⚠SK1351	QNZ0536-001	CRT SOCKET	
⚠TH1901	QAD0129-3R0	P THERMISTOR	3Ω
⚠TU1001	QAU0274-001	TUNER	
⚠VA1901	ERZV10V621CS	ZNR	
W1001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1412	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1728	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1729	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1801	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1802	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1815	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
W1836	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
X1701	QAX0717-001Z	CRYSTAL	8.000MHz
Y1251	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
Y1501	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
Y1601	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
Y1602	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
Y1605	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
Y1854	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J

REMOTE CONTROL UNIT PARTS LIST (RM-C1254G-1H)

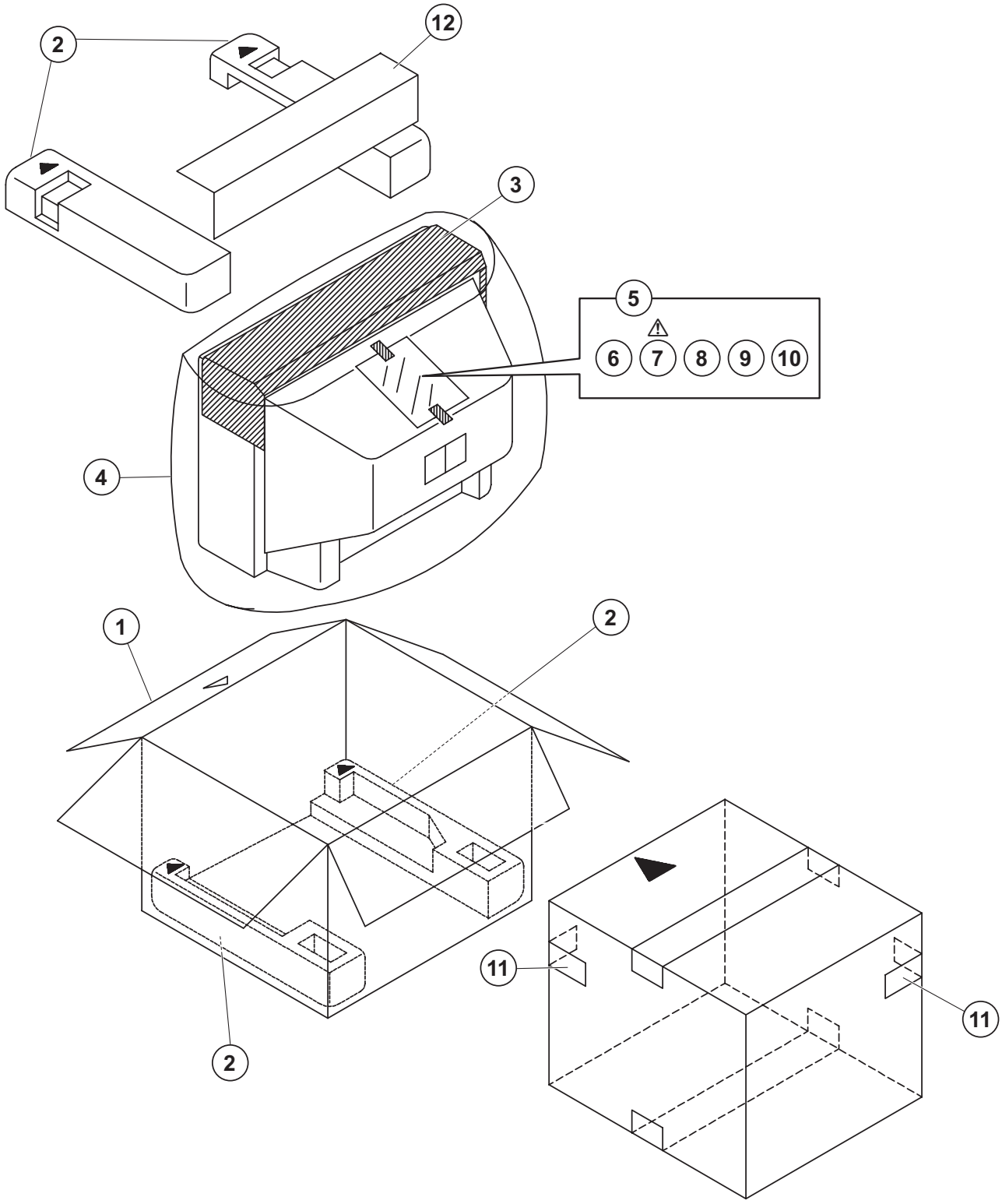


⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	UR77EC0603	BATTERY COVER		

PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	GQ10009-006B-A	PACKING CASE		
	2	GQ10021-001B-A	CUSHION ASSY	4pcs in 1set	
	3	CP30055-001-A	TOP COVER		
	4	CP30056-009-A	POLY BAG		
	5	QPA02503505	POLY BAG	25cm x 35cm	
	6	RM-C1254G-1H	REMOCON UNIT		
⚠	7	LCT1319-001A-A	INST BOOK		
	8	BT-52006-1Q	WARRANTY CARD		
	9	BT-51028-2Q	REGISTRATION CARD		
	10	----------	BATTERY	(x2)	
	11	CM36616-001-A	CORNER LABEL	2pcs in 1set	
	12	GQ30043-003A-A	TOP PAD		

PACKING



JVC

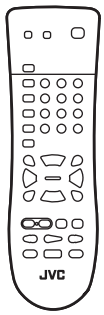
SCHEMATIC DIAGRAMS

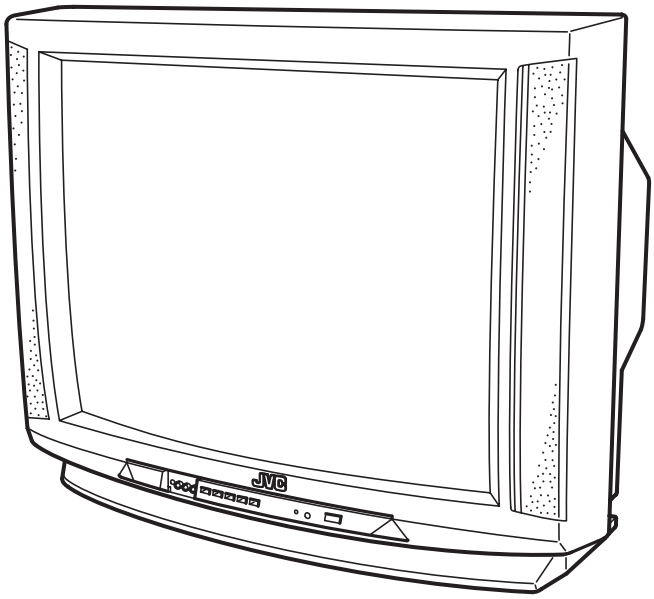
COLOR TELEVISION

AV-20D304/SA

BASIC CHASSIS
FE2

CD-ROM No.SML200304





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No.52103
2003/02

AV-20D304/SA

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal	: Colour bar signal	
(2)Setting positions of each knob/button and variable resistor	: Original setting position when shipped	
(3)Internal resistance of tester	:DC 20kΩ/V	
(4)Oscilloscope sweeping time	:H	⇒ 20µs/div
	:V	⇒ 5ms/div
	:Others	⇒ Sweeping time is specified
(5)Voltage values	:All DC voltage values	

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board :R1209 → R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

No unit	:[Ω]
K	:[k Ω]
M	:[M Ω]

● Rated allowable power

No indication	:1/ 16 [W]
Others	:As specified

● Type

No indication	:Carbon resistor
OMR	:Oxide metal film resistor
MFR	:Metal film resistor
MPR	:Metal plate resistor
UNFR	:Uninflammable resistor
FR	:Fusible resistor

∗ Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

1 or higher	:[pF]
less than 1	:[µF]

● Withstand voltage

No indication	:DC50[V]
Others	:DC withstand voltage [V]
AC indicated	:AC withstand voltage [V]

∗ Electrolytic Capacitors

47/50[Example]:Capacitance value [µF]/withstand voltage[V]

● Type

No indication	:Ceramic capacitor
MM	:Metalized mylar capacitor
PP	:Polypropylene capacitor
MPP	:Metalized polypropylene capacitor
MF	:Metalized film capacitor
TF	:Thin film capacitor
BP	:Bipolar electrolytic capacitor
TAN	:Tantalum capacitor

(3)Coils

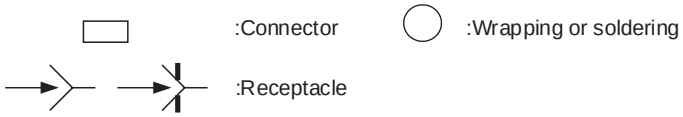
No unit	:[µH]
Others	:As specified

(4)Power Supply

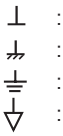
∗ Respective voltage values are indicated

(5)Test point

(6)Connecting method



(7)Ground symbol



5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND.Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

NOTE

◇ **Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.**
When ordering parts, please use the numbers that appear in the Parts List.

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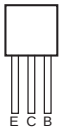
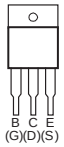
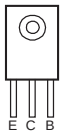
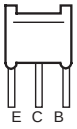
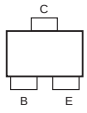
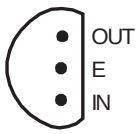
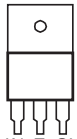
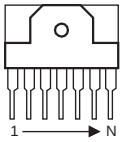
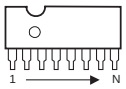
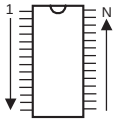
SEMICONDUCTOR SHAPES

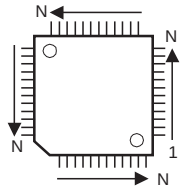
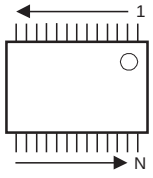
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

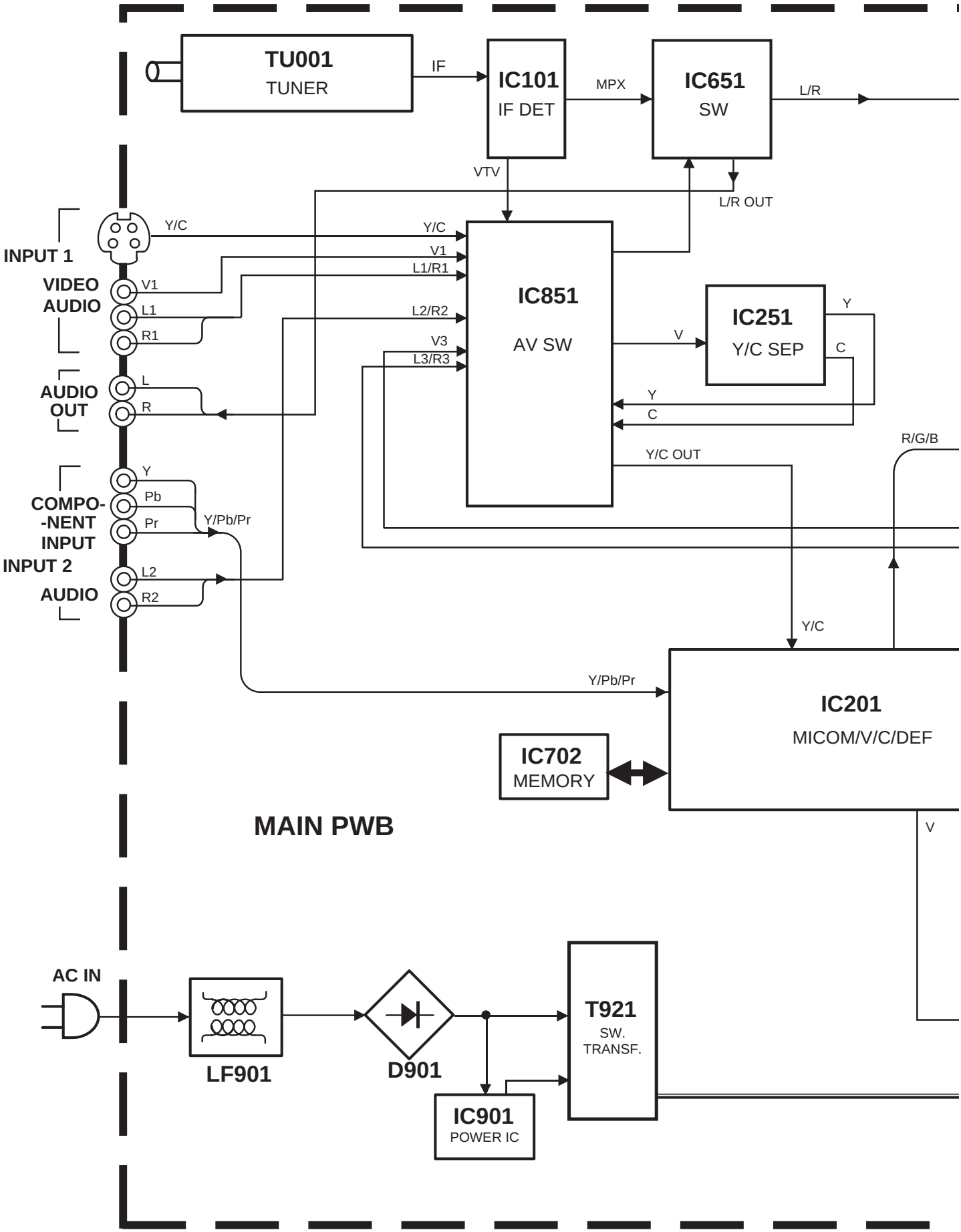
IC

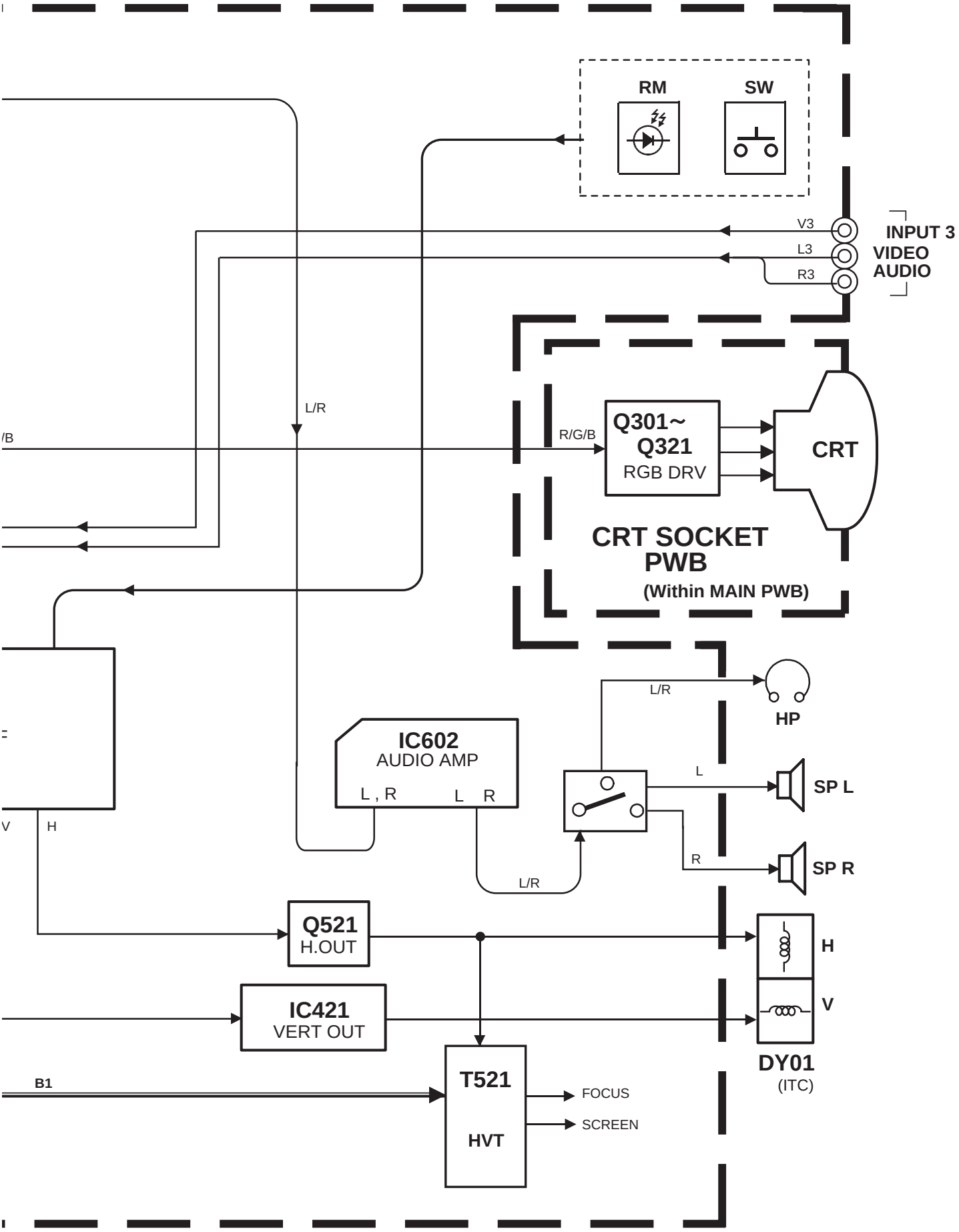
BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

TOP VIEW		
		

BLOCK DIAGRAM




RM
SW
V3
L3
R3
INPUT 3
VIDEO
AUDIO
L/R
R/G/B
Q301~
Q321
RGB DRV
CRT
CRT SOCKET
PWB
(Within MAIN PWB)
L/R
HP
IC602
AUDIO AMP
L , R
L R
L
SP L
R
SP R
L/R
V
H
Q521
H.OUT
H
IC421
VERT OUT
V
DY01
(ITC)
B1
T521
HVT
FOCUS
SCREEN

CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM (1/2) SHEET 1

PIN NO.	VOLTAGE (V)
IC101	
1	1.7
2	4.5
3	3.8
4	1.3
5	1.4
6	0
7	0
8	0
9	0
10	3.9
11	2.4
12	4.5
13	2.0
14	3.4
15	2.0
16	8.6
17	8.6
18	3.9
19	3.9
20	4.7
21	4.7
22	0
23	3.4
24	1.6
IC201	
1	0
2	2.6
3	5.0
4	0
5	5.0
6	2.2
7	2.0
8	0
9	5.0
10	0
11	0
12	0
13	0.8
14	1.8
15	8.8
16	6.2
17	3.5
18	4.4
19	---
20	0
21	---
22	2.0
23	2.3
24	2.0
25	3.4
26	2.1
27	---
28	2.3
29	0
30	2.1
31	5.9
32	---
33	2.2
34	---
35	1.6
36	2.6
37	2.8
38	---
39	2.1
40	2.0
41	2.3
42	8.7
43	0
44	0
45	0
46	5.0
47	0.2
48	---
49	4.6
50	4.0
51	4.9
52	1.7
53	4.9
54	0
55	4.9
56	---
IC251	
1	4.8
2	1.2
3	3.0
4	2.2
5	1.7
6	4.8
7	0
8	4.8
9	4.4
10	3.8
11	0
12	0
13	2.4
14	1.8
15	4.8
16	0
17	2.3
18	3.0
19	1.7
20	2.2
IC601	
1	4.3
2	4.3
3	4.3
4	4.3
5	4.3
6	4.3
7	4.3
8	8.6
9	8.6
10	7.4

PIN NO.	VOLTAGE (V)
11	0
12	8.6
13	4.3
14	4.3
15	4.3
16	4.3
17	4.3
18	4.3
19	4.3
20	4.3
IC602	
1	0
2	13.5
3	1.1
4	0
5	12.4
6	7.0
7	13.5
8	7.0
9	12.3
10	0
11	1.1
12	0
13	0
IC651	
1	4.5
2	3.9
3	0
4	0
5	4.3
6	4.3
7	4.3
8	4.3
9	4.3
10	4.3
11	4.2
12	4.3
13	4.3
14	4.3
15	4.3
16	4.3
17	4.3
18	4.3
19	4.3
20	4.3
21	4.0
22	8.6
23	4.3
24	4.3
25	4.3
26	4.3
27	4.3
28	4.3
29	5.8
30	1.4
31	3.1
32	4.2
33	4.0
34	4.9
35	4.3
36	1.1
37	4.9
38	3.8
39	4.0
40	4.7
41	4.1
42	0
IC702	
1	0
2	0
3	0
4	0
5	5.0
6	5.0
7	0
8	5.0
IC703	
1	---
2	5.0
3	0
IC704	
1	9.0
2	0
3	5.0
IC851	
1	3.7
2	0
3	6.3
4	3.5
5	5.0
6	5.0
7	5.0
8	5.0
9	5.0
10	5.0
11	5.0
12	5.0
13	6.0
14	1.7
15	5.0
16	5.0
17	5.0
18	1.7
19	0
20	0
21	0
22	0
23	0
24	4.1
25	4.6
26	1.0
27	0
28	5.0
29	5.0

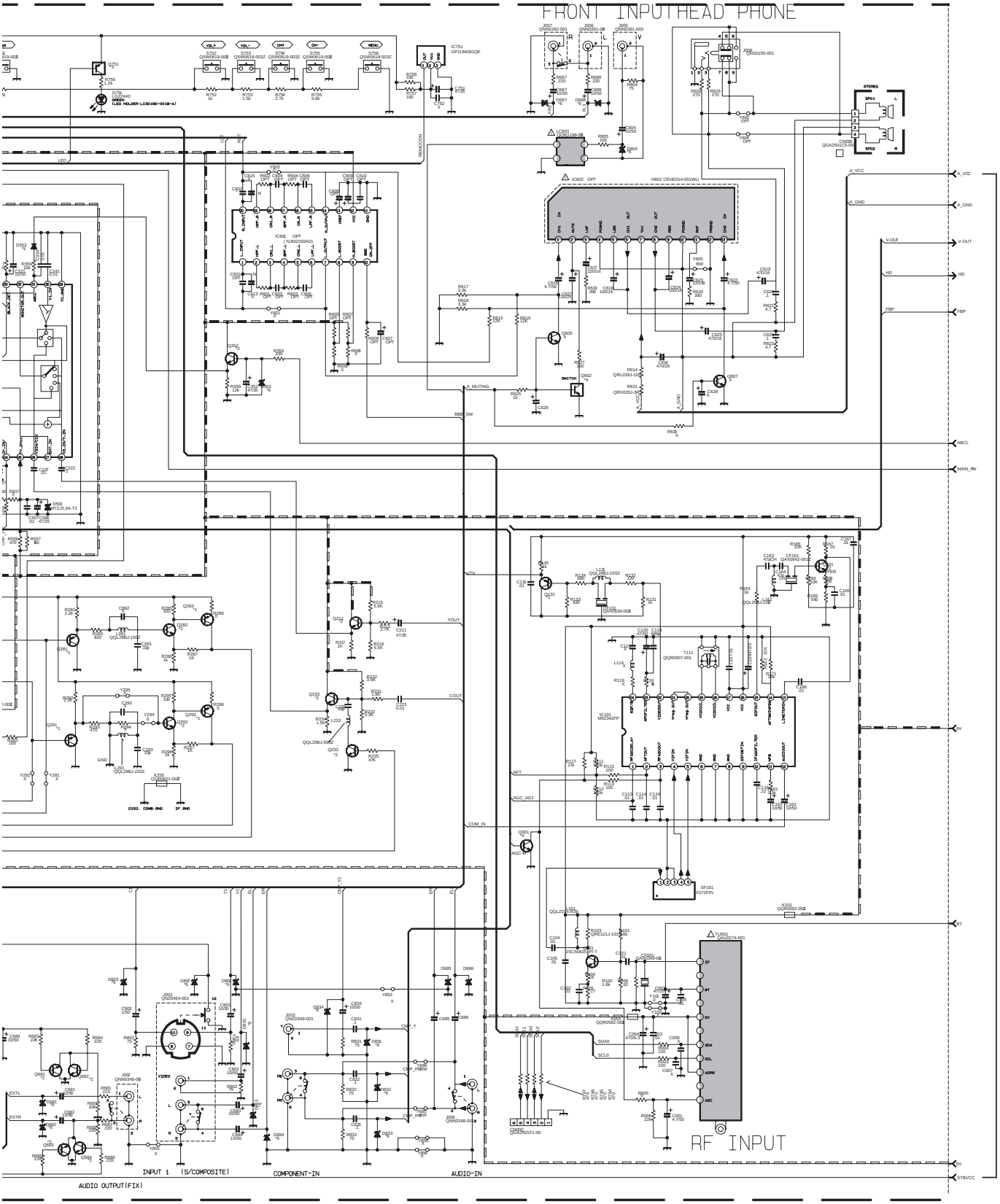
PIN NO.	VOLTAGE (V)
30	5.0
31	5.0
32	5.0
33	8.7
34	3.6
35	3.8
36	3.6
37	3.8
38	4.2
39	3.7
40	3.7
41	8.0
42	4.2
Q001	
E	0
C	3.8
B	0
Q101	
E	0.9
C	8.6
B	1.6
Q131	
E	1.8
C	0
B	1.1
Q161	
E	1.9
C	5.6
B	2.5
Q211	
E	3.6
C	8.6
B	4.1
Q232	
E	0
C	1.1
B	0
Q233	
E	3.2
C	8.6
B	3.9
Q251	
E	2.9
C	4.8
B	3.6
Q252	
E	2.3
C	4.8
B	2.9
Q281	
E	2.8
C	0
B	2.2
Q282	
E	2.2
C	4.2
B	2.8
Q283	
E	4.8
C	2.7
B	4.2
Q291	
E	2.9
C	0
B	2.4
Q352	
E	6.5
C	8.6
B	7.1
Q602	
E	0
C	13.5
B	0.1
Q681	
E	0
C	0
B	0.1
Q682	
E	0
C	0
B	0.1
Q683	
E	0
C	0
B	0.1
Q684	
E	0
C	0
B	0.1
Q701	
E	1.4
C	1.4
B	0.6
Q751	
E	5.0
C	4.9
B	0
Q851	
E	8.6
C	1.7
B	8.5
TU001	
AGC	3.8
ADRS	4.8
SCL	4.1
SDA	4.5

MAIN PWB (1/2)
SFE-1031A-M2

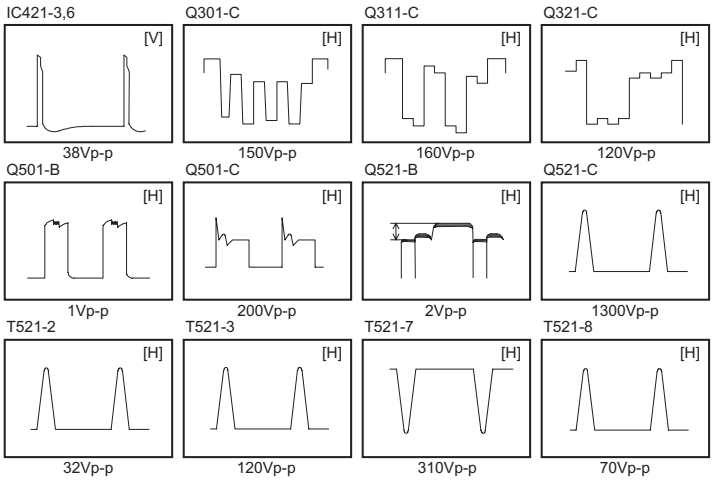
IC201-13 [H] 6Vp-p
IC251-4 [H] 1Vp-p
IC201-14 [H] 60Vp-p
IC251-17 [H] 0.5Vp-p
IC201-28 [H] 0.8Vp-p
IC251-20 [H] 1Vp-p
IC201-26 [H] 0.5Vp-p
IC851-10 [H] 1Vp-p
IC201-39 [H] 4.8Vp-p
IC851-34 [H] 0.5Vp-p
IC201-40 [H] 3.2Vp-p
IC851-36 [H] 1Vp-p
IC201-41 [H] 6Vp-p
IC421-5 [V] 65Vp-p
IC101-18 [H] 2Vp-p

NOTE

*1 : CHIP PNP Tr	2SA1037AK/QR/-X	OR	2SB709A/QR/-X	SW	: BUS WIRE
*2 : CHIP NPN Tr	2SC2412K/QR/-X	OR	2SD601A/QR/-X	X	: NON-MOUNT(OPEN)
*3 : CHIP PNP D-Tr	DTA124EKA-X			⚠	: SAFETY PARTS
*4 : CHIP NPN D-Tr	DTC124EKA-X			0	: 0 Ω RESISTOR
*5 : SI DIODE	1SS133-T2			≠	: DIFFERENCE PARTS
*6 : ZENER DIODE	MTZJ9.1C-T2				
*7 : ZENER DIODE	MTZJ5.6A-T2				
*8 : SI DIODE	RMPULFSG2S-T3				
*9 : SI DIODE	1SR35-400A-T2				
*10-PNP TE	2SA933AS/QR/-3				


FRONT INPUT
HEAD PHONE
SHEET 2
RF INPUT
INPUT 1 (S/COMPOSITE)
COMPONENT-IN
AUDIO-IN
AUDIO OUTPUT(FIX)

MAIN PWB CIRCUIT DIAGRAM (2/2) SHEET 2

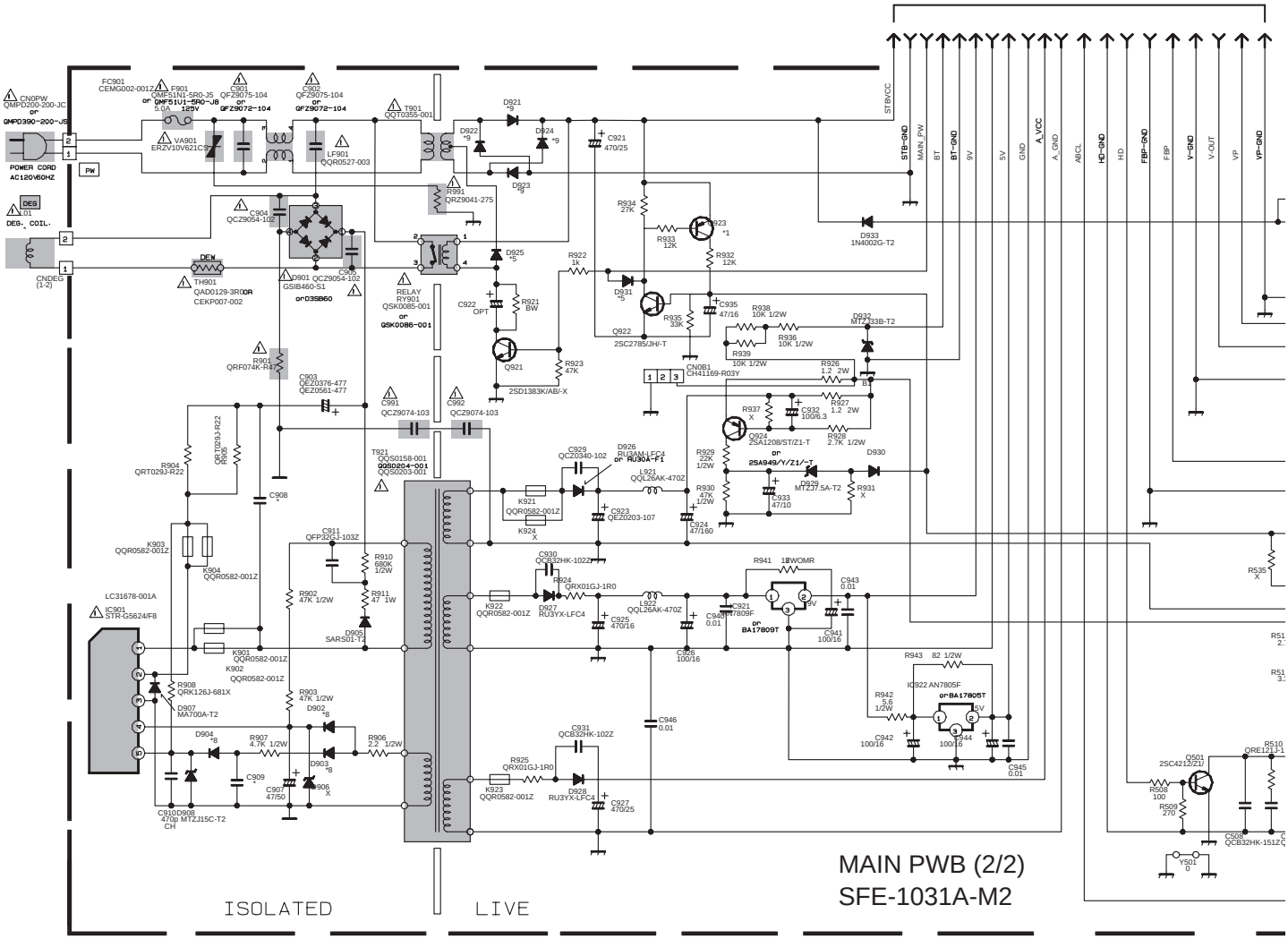


PIN NO.	VOLTAGE (V)
IC421	
1	4.2
2	27.2
3	2.0
4	0
5	16.1
6	28.3
7	4.2
IC901	
1	139.0
2	0
3	0
4	32.1
5	1.5
IC921	
1	11.4

PIN NO.	VOLTAGE (V)
2	9.0
3	0
IC922	
1	7.3
2	0
3	4.8
Q301	
E	1.7
C	159.9
B	2.2
Q311	
E	1.7
C	165.0
B	2.1
Q321	
E	1.5

PIN N
C
B
Q33
E
C
B
Q50
E
C
B
Q52
E
C
B
Q92
E

SHEET 1



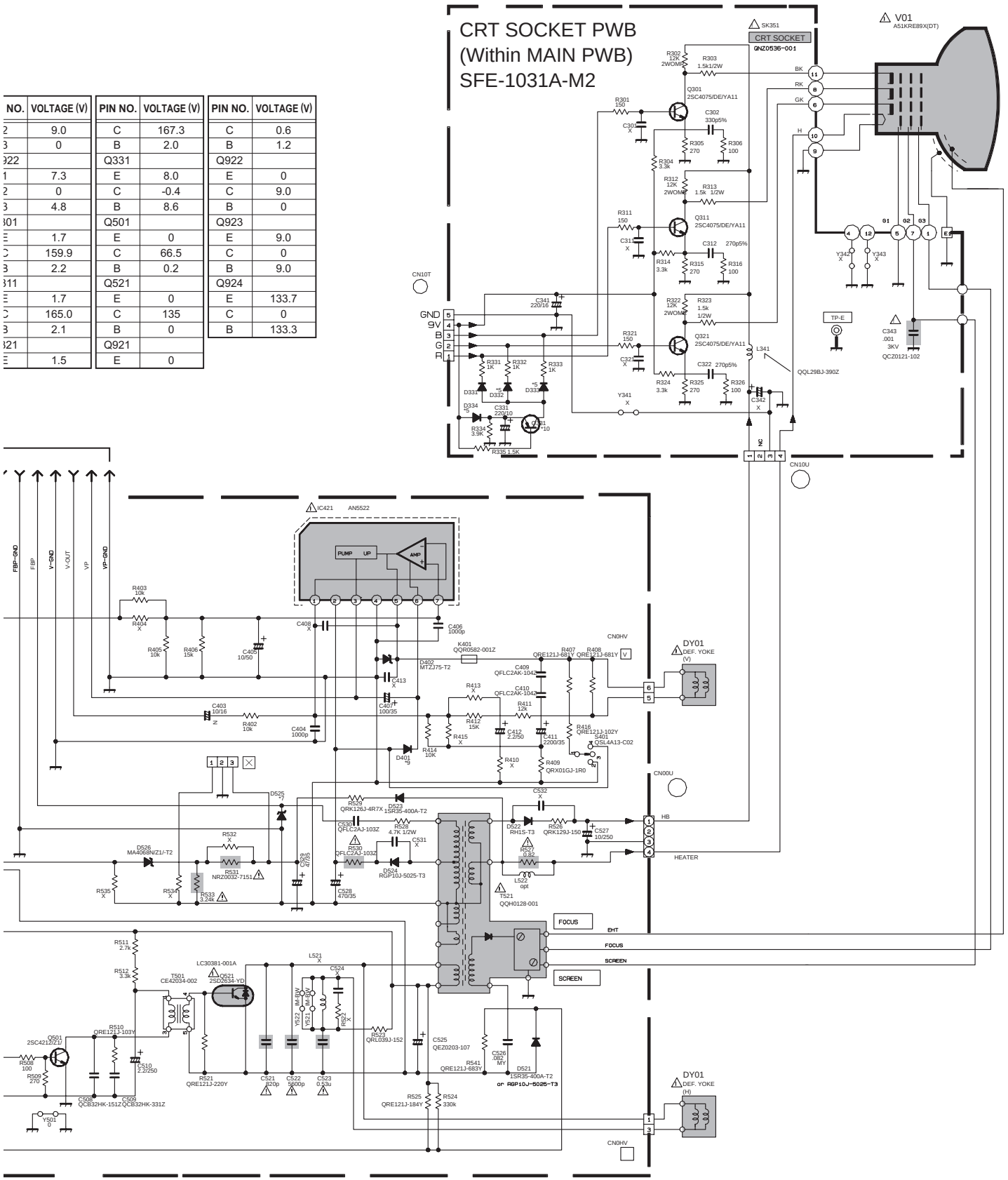
NOTE

*1	: CHIP PNP Tr	2SA1037AK/QR/-X	BW	: BUS WIRE	
*2	: CHIP NPN Tr	2SC2412K/QR/-X	X	: NON-MOUNT(OPEN)	
*3	: CHIP PNP D-Tr	DTA124EKA-X	⚠	: SAFETY PARTS	
*4	: CHIP NPN D-Tr	DTC124EKA-X	0	: 0Ω RESISTOR	
*5	: SI DIODE	1SS133-T2	*	: DIFFERENCE PARTS	
*6	: ZENER DIODE	MTZJ9.1C-T2			
*7	: ZENER DIODE	MTZJ5.6A-T2			
*8	: SI DIODE	RGP10J-5025-T3			
*9	: SI DIODE	1SR35-400A-T2 or 1N4003-T2			
*10	: PNP TR	2SA933AS/QR/-T			

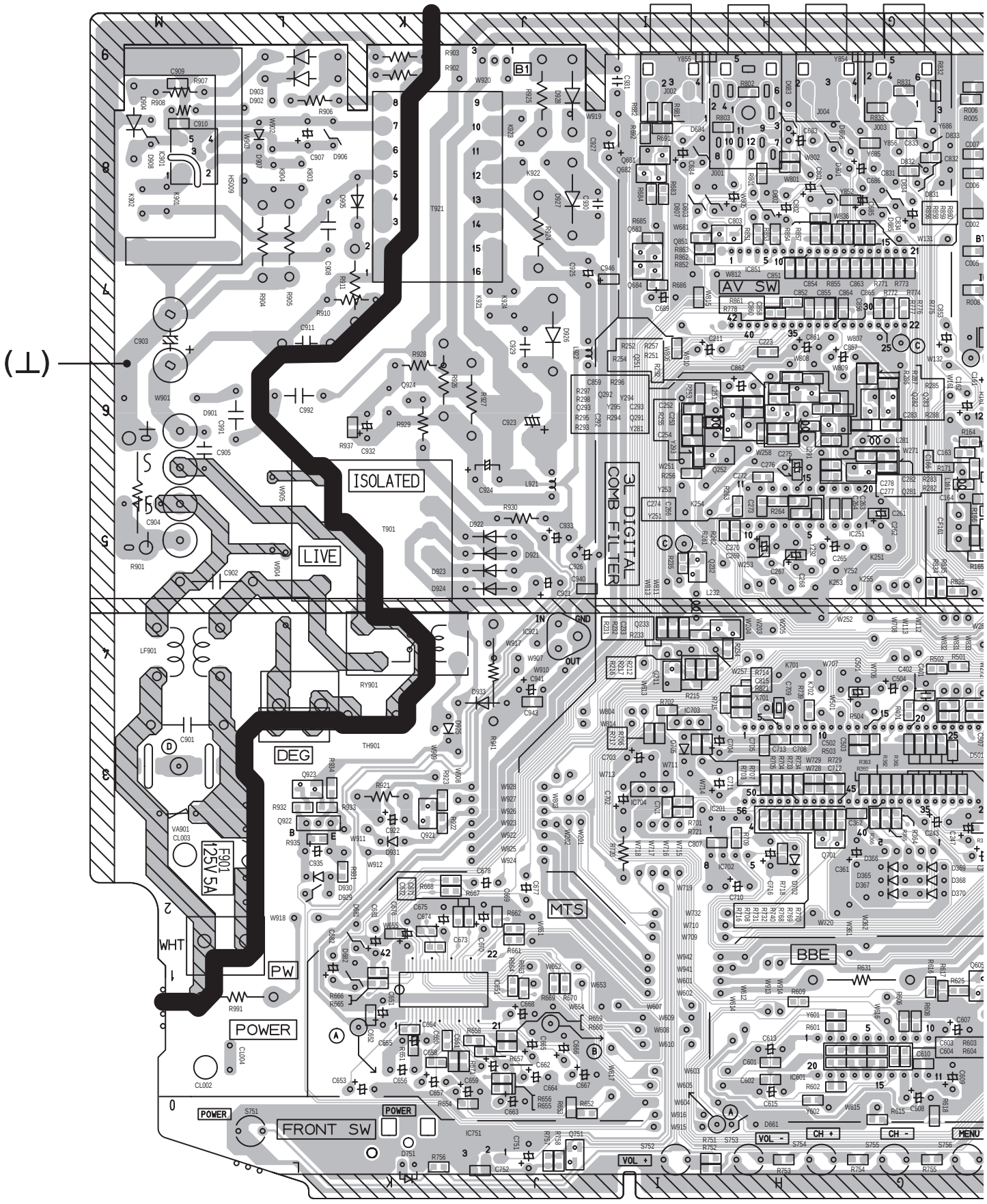
NO.	VOLTAGE (V)
2	9.0
3	0
922	
1	7.3
2	0
3	4.8
501	
E	1.7
C	159.9
B	2.2
911	
E	1.7
C	165.0
B	2.1
921	
E	1.5

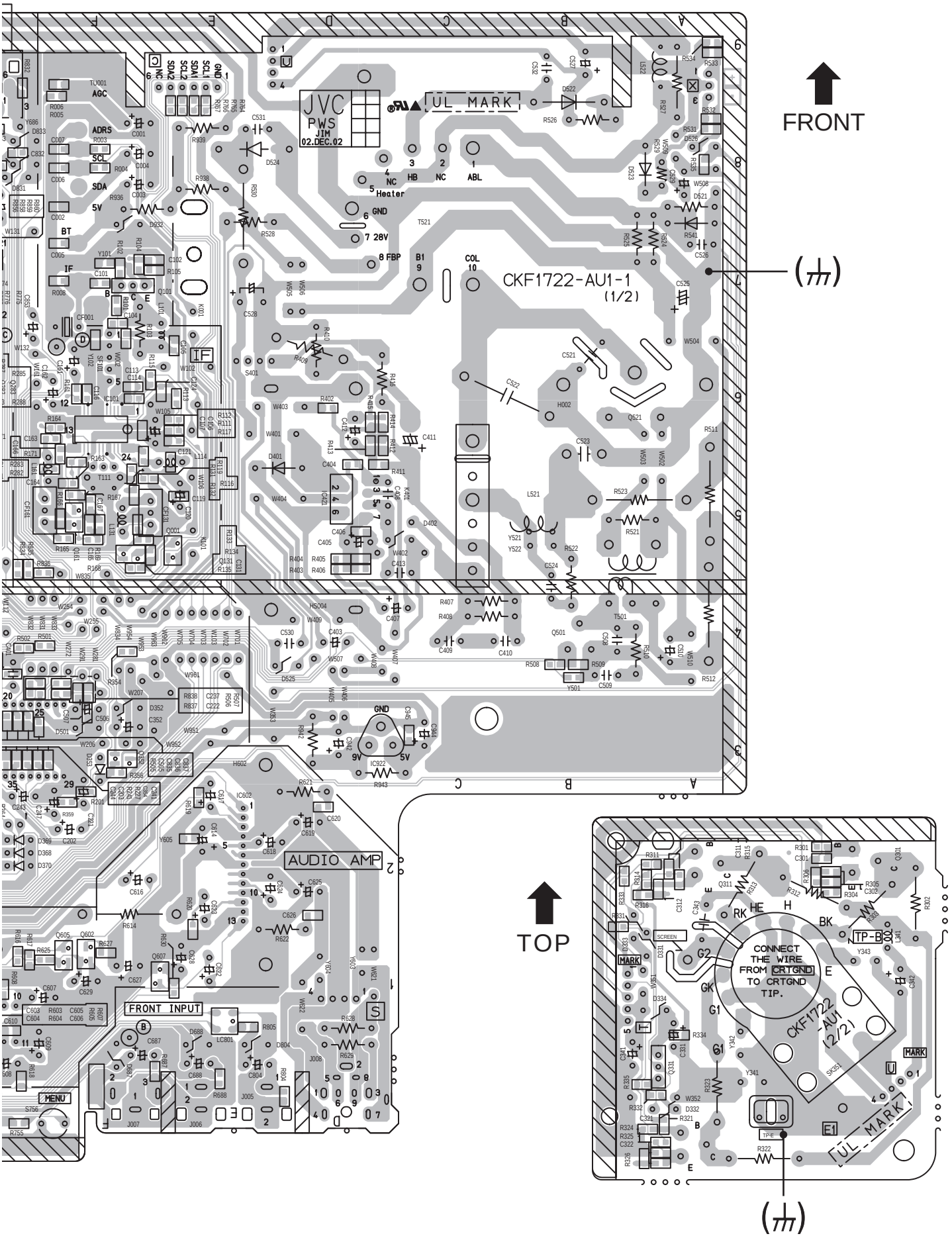
PIN NO.	VOLTAGE (V)
C	167.3
B	2.0
Q331	
E	8.0
C	-0.4
B	8.6
Q501	
E	0
C	66.5
B	0.2
Q521	
E	0
C	135
B	0
Q921	
E	0

PIN NO.	VOLTAGE (V)
C	0.6
B	1.2
Q922	
E	0
C	9.0
B	0
Q923	
E	9.0
C	0
B	9.0
Q924	
E	133.7
C	0
B	133.3



PATTERN DIAGRAMS *MAIN PWB PATTERN*




FRONT
TOP
CKF1722-AU1-1
(1/2)
CKF1722-AU1
(2/2)
AUDIO AMP
FRONT INPUT
MENU
UL MARK
CONNECT
THE WIRE
FROM CRTGND
TO CRTGND
TIP.
JVC
PWS
JIM
02.DEC.02

CHANNEL CHART (US)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02 03 04 05 06		I
		VH	07 08 09 10 11 12 13		II
×	○	MID	A B	14 15	I
			C D E F G H I	16 17 18 19 20 21 22	II
		SUPER	J K L M N O P Q R S T U V W	23 24 25 26 27 28 29 30 31 32 33 34 35 36	
		HYPER	W+1 W+2 W+3 W+4 W+5 W+6 W+7 W+8 W+9 W+10 W+11	37 38 39 40 41 42 43 44 45 46 47	
			W+12 W+13 W+14 W+15 W+16 W+17 W+18 W+19 W+20 W+21 W+22 W+23 W+24 W+25 W+26 W+27 W+28	48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	IV
		ULTRA	W+29 W+30 W+31 W+32 W+33 W+34	65 66 67 68 69 70	

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35 W+36 W+37 W+38 W+39 W+40 W+41 W+42 W+43 W+44 W+45 W+46 W+47 W+48 W+49 W+50 W+51 W+52 W+53 W+54 W+55 W+56 W+57 W+58 W+59 W+60 W+61 W+62 W+63 W+64 W+65 W+66 W+67 W+68 W+69 W+70 W+71 W+72 W+73 W+74 W+75 W+76 W+77 W+78 W+79 W+80 W+81 W+82 W+83 W+84	71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125	IV
		SUB MID	A-8 A-4 A-3 A-2 A-1	01 96 97 98 99	I
○	×	UHF	14 ≀ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

NOTE:
TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES.
SPECIAL ADAPTERS MAY BE REQUIRED.

CHANNEL CHART (CA)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02		I
			03		
			04		
			05		
			06		
		VH	07		II
			08		
			09		
			10		
			11		
			12		
			13		
×	○	MID	A	14	
			B	15	
			C	16	
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	III
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W+1	37	
			W+2	38	
			W+3	39	
			W+4	40	
			W+5	41	
			W+6	42	
			W+7	43	
			W+8	44	
			W+9	45	
			W+10	46	
			W+11	47	
			W+12	48	
			W+13	49	
			W+14	50	
			W+15	51	
			W+16	52	
			W+17	53	
			W+18	54	
			W+19	55	
			W+20	56	
			W+21	57	
			W+22	58	
			W+23	59	
			W+24	60	
			W+25	61	
			W+26	62	
			W+27	63	
			W+28	64	
		ULTRA	W+29	65	
			W+30	66	IV
			W+31	67	
			W+32	68	
			W+33	69	
			W+34	70	
×	○	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
			W+46	82	
			W+47	83	
			W+48	84	
			W+49	85	
			W+50	86	
			W+51	87	
			W+52	88	
			W+53	89	
			W+54	90	
			W+55	91	
			W+56	92	
			W+57	93	
			W+58	94	
			W+59	100	
			W+60	101	
			W+61	102	
			W+62	103	
			W+63	104	
			W+64	105	
			W+65	106	
			W+66	107	
			W+67	108	
			W+68	109	
			W+69	110	
			W+70	111	
			W+71	112	
			W+72	113	
			W+73	114	
			W+74	115	
			W+75	116	
			W+76	117	
			W+77	118	
			W+78	119	
			W+79	120	
			W+80	121	
			W+81	122	
			W+82	123	
			W+83	124	
			W+84	125	
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	II
			A-2	98	
			A-1	99	
○	×	UHF	14 ~ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

NOTE:
TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES.
SPECIAL ADAPTERS MAY BE REQUIRED.

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200302WPC